

# Democracy Suite<sup>®</sup> EMS Automated Test Deck User Guide

Version: 5.13-A::1

April 19, 2022

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## **CHAPTER 1: INTRODUCTION**

The basic operation of the Automated Test Deck (ATD) is to produce, for each ballot ID, a distinct marked deck of ballots and results.

The ATD module is an extension of Democracy Suite and thus only runs on machines that have EMS and the elections databases. It does not run as a standalone.

## **CHAPTER 2: INSTALLING AUTOMATED TEST DECK**

This chapter outlines how to install the EMS Automated Test Deck application.

If a previous version of Automated Test Deck exists on your workstation, perform the following:

1. On your workstation, navigate to the Start menu.
2. Right-click the Start menu and select Control Panel. An All Control Panel Items screen appears.
3. Within this screen, select Programs and Features.
4. A list of all installed programs appears. From this list, highlight EMS Automated Test Deck and click Uninstall on the grey toolbar.
5. Click Yes to confirm and begin the uninstall process.
6. Once uninstalled, close all open windows and perform a fresh installation as outlined in the following section.

### **2.1 Installation Procedure**

1. Double-click on the Automated Test Deck setup.exe file to start this installation process.

2. The Automated Test Deck Setup Wizard welcome screen appears. Click Next to begin your installation.

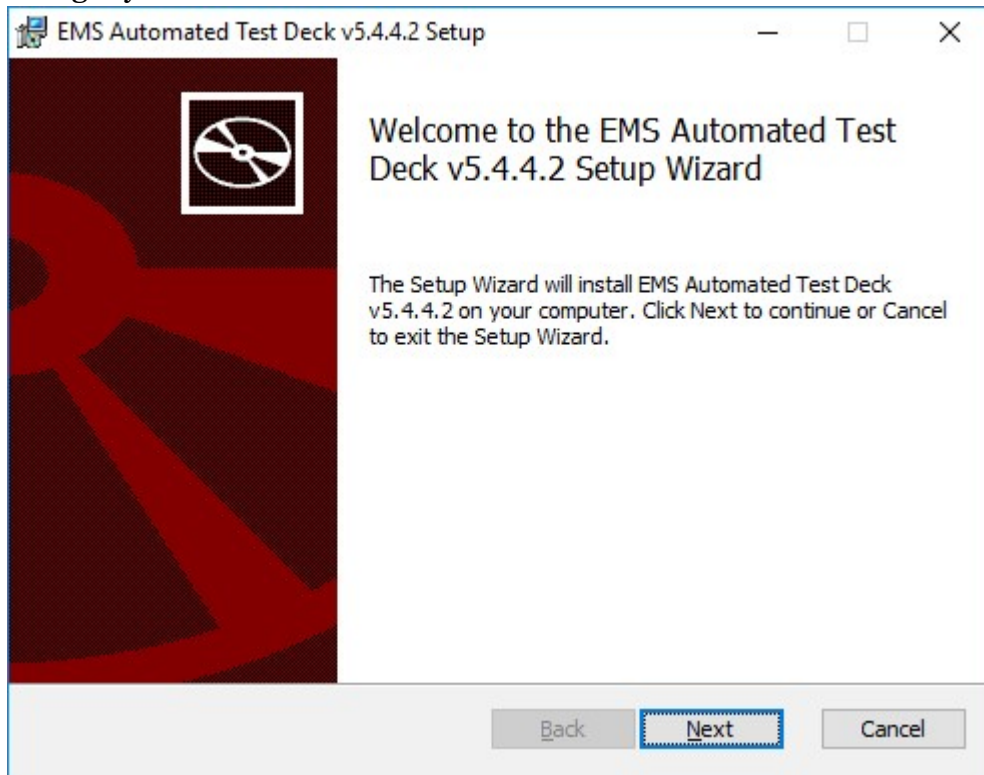


Figure 2-1: Automated Test Deck: Setup Wizard Welcome Screen

3. On the License Agreement screen, select the “I accept the terms in the license Agreement” option and click Next.

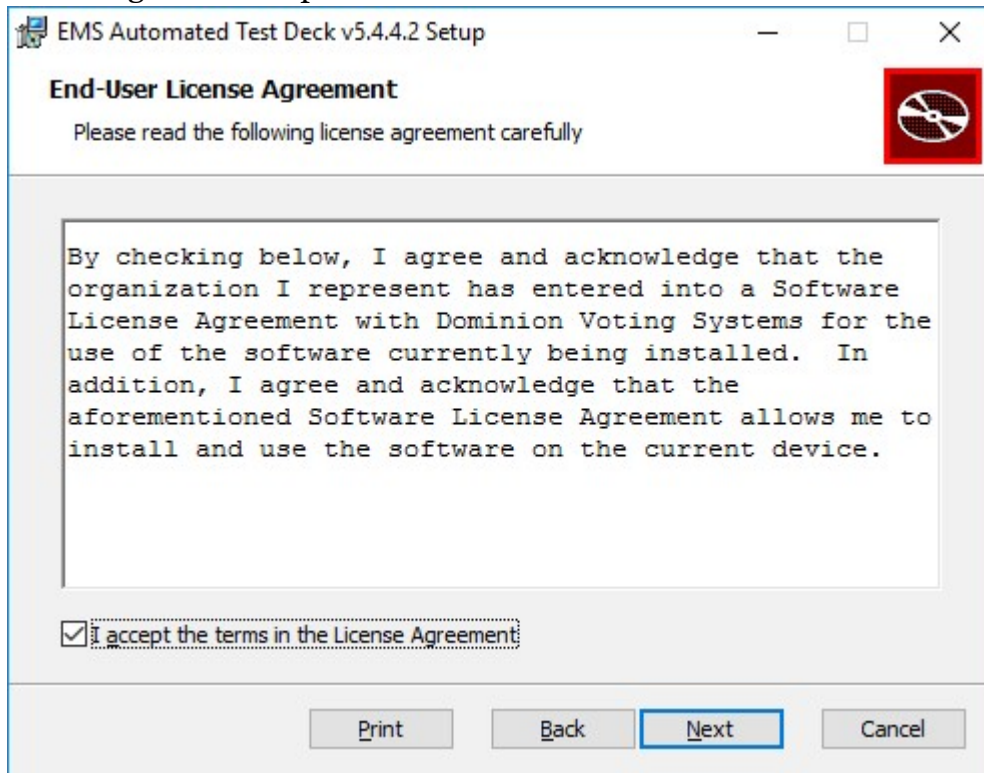


Figure 2-2: Automated Test Deck: License Agreement Screen

4. The Select Destination Folder screen appears. Keep the default file path listed in the 'Folder' field. This is the location to which Automated Test Deck will be installed. Click Next to continue.

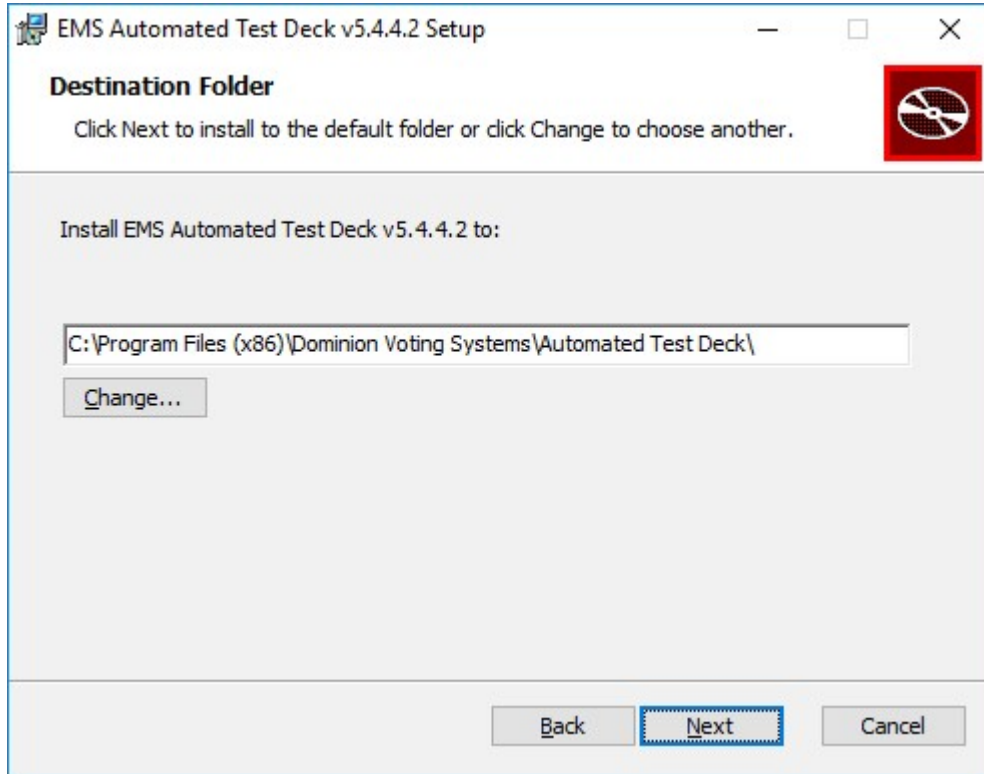


Figure 2-3: Automated Test Deck: Select Destination Folder Screen



5. The Ready To Install screen appears. Click Install.

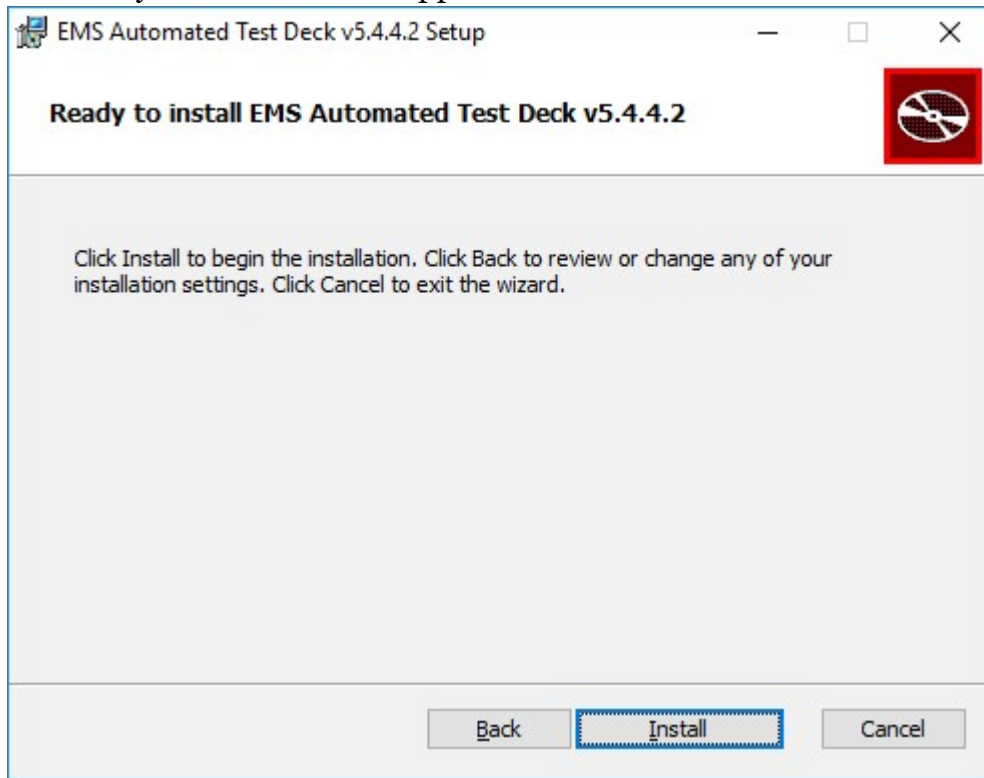


Figure 2-4: Automated Test Deck: Ready To Install Screen

6. You will receive confirmation that the installation has completed. The Automated Test Deck is now installed on your workstation. Click Finish to exit the Automated Test Deck Installation Wizard.

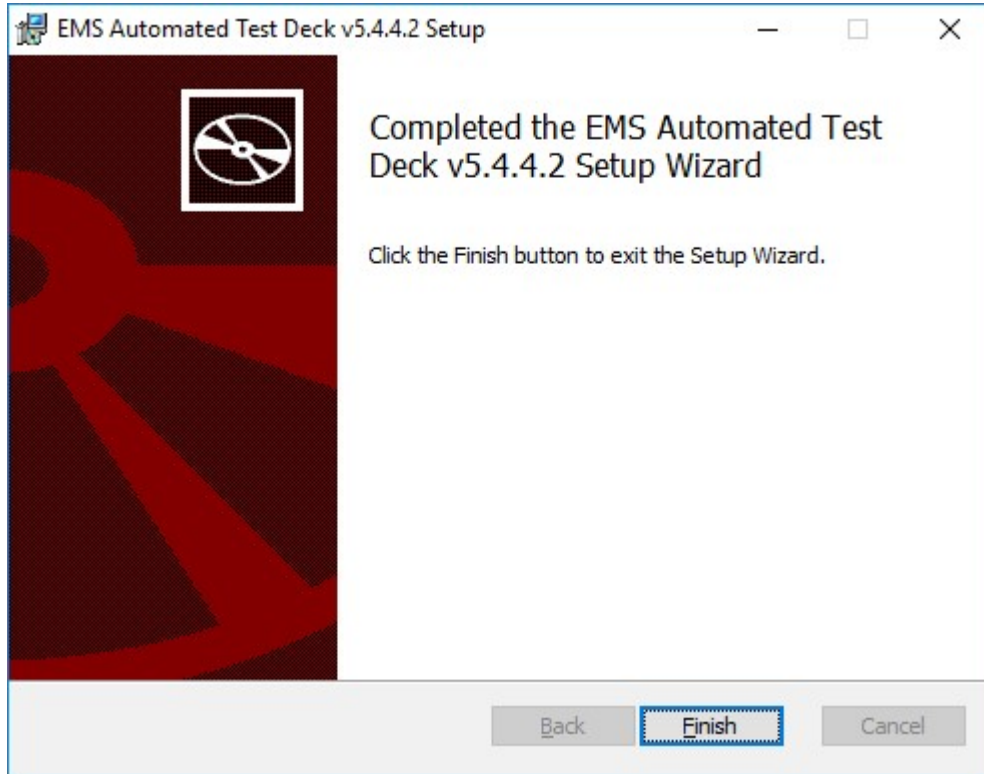


Figure 2-5: Automated Test Deck: Installation Complete Screen

7. Once you have successfully installed EMS Automated Test Deck, a shortcut will automatically appear on your Desktop:



Figure 2-6: Automated Test Deck: Desktop Shortcut

## CHAPTER 3: CREATING ELECTION PROJECT TEST DECK

This Chapter describes how to create election project test deck.

1. Start Automated Test Deck application.  
 If you are starting Automated Test Deck for the first time, you need to configure EMS Application Server Settings. Network Settings dialog will appear.  
 Within the Network Settings dialog:
  - a. Type in the IP Address or Name of the EMS Application Server host.
  - b. In the ‘EMS Application Server Name’ field, type ‘emsapplicationserver’.
  - c. Click ‘Test’ to confirm that the entered parameters are correct. If the parameters have been entered correctly, click ‘OK’ to save the entered data.

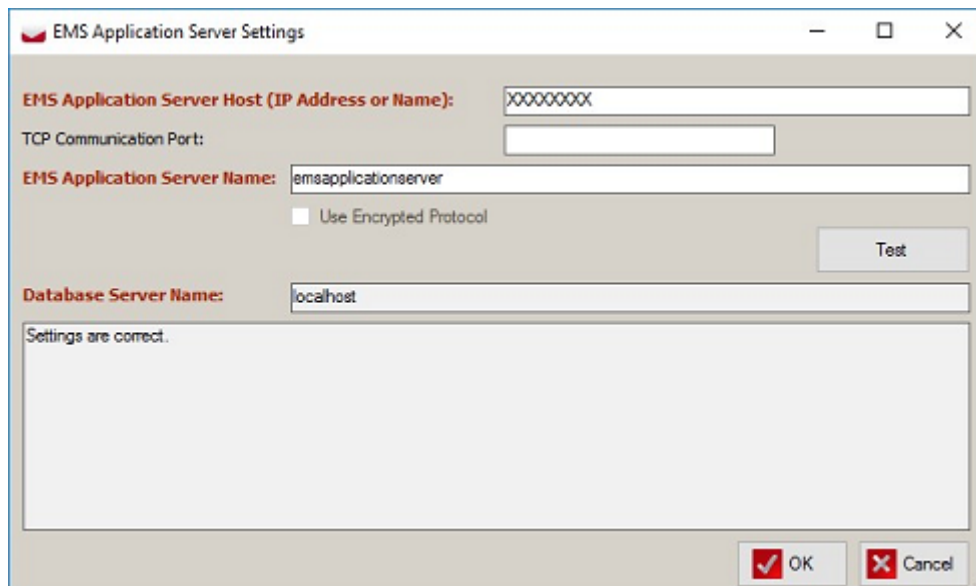


Figure 3-1: Network Settings

2. Login to election project.  
 An *Automated Test Deck* screen will appear.
3. Click on the **Browse** button to select a working directory where all created test deck files will be placed.
4. In the *Marking Algorithm* combo box select test deck you want to create.  
 Available test decks are described in the section *Available Test Decks*.
5. Click on the **Properties** button if you want to review or change test deck properties. Besides drawing properties which are common for all test decks, properties window may contain additional properties related to the selected test deck.

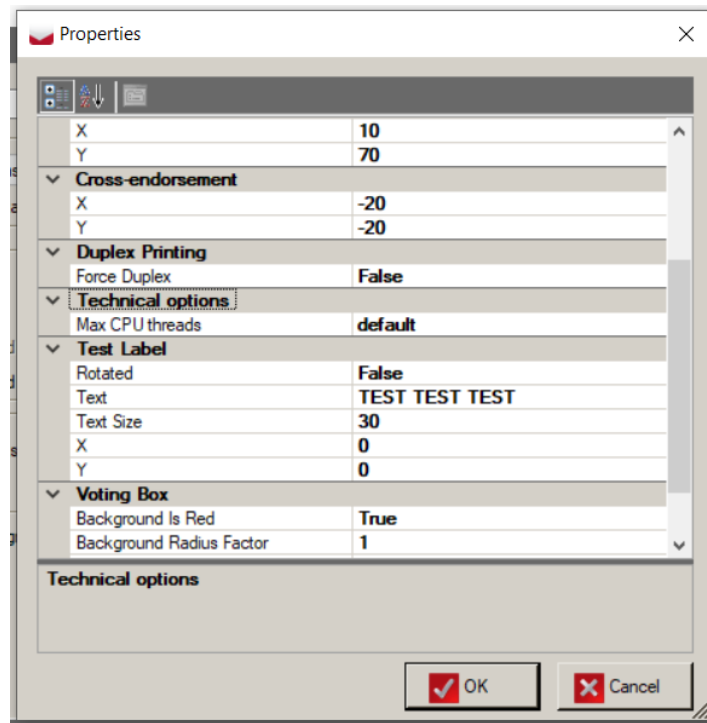


Figure 3-2: ATD Properties

6. When the configuration is set, press **OK** and the application will return to the main screen.
7. Optionally, you can:
  - a. **Exclude rotation:** When this option is selected, each choice gets the same number of votes on each ballot regardless of actual position on the ballot due to ballot rotation.
  - b. **Consolidate test deck**
  - c. **Merge ballot card** pdf documents and results in case when selected test deck contains sub decks
  - d. **Generate outputs per tabulator groups:** When two or more tabulators are connected to the same precincts/ballots, they will have the same marked ballots and expected results. If this option is selected one folder with outputs will be created for each detected tabulator group instead of creating separate folders with the same outputs for each tabulator within a group. Furthermore, report with detected tabulator groups will be created.
  - e. **Generate BMP files**
  - f. **Filter tabulators**
  - g. **Filter ballot groups**

## h. Filter ballot content languages

### 8. Click **Create Test Deck** to start process.

A *Done* message will appear after test deck is created, and a new directory with test deck result files will appear in the working directory.

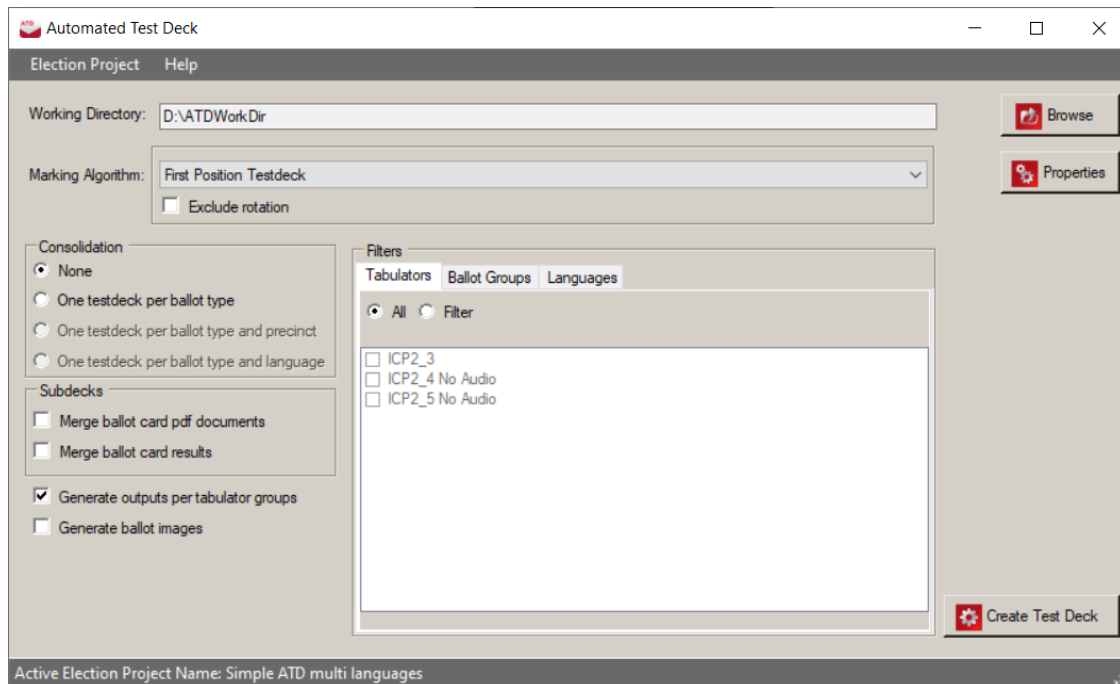


Figure 3-3: Automated Test Deck Screen

In addition to the Test Deck, a report, in the form of an excel file, will automatically be generated listing all the options used when the test deck was created. This report is saved in the same working directory as the Test Deck, and contains the following data:

- date and time the deck was created
- number of decks created
- number of PDFs in the entire deck
- list of the settings in the Marking algorithm properties
- list of any selections made in consolidation, sub-decks, or filtering criteria

## 3.1 Consolidation levels

ATD features multiple consolidation levels for producing test decks with a variety of ranges of coverage across the projects' ballots.

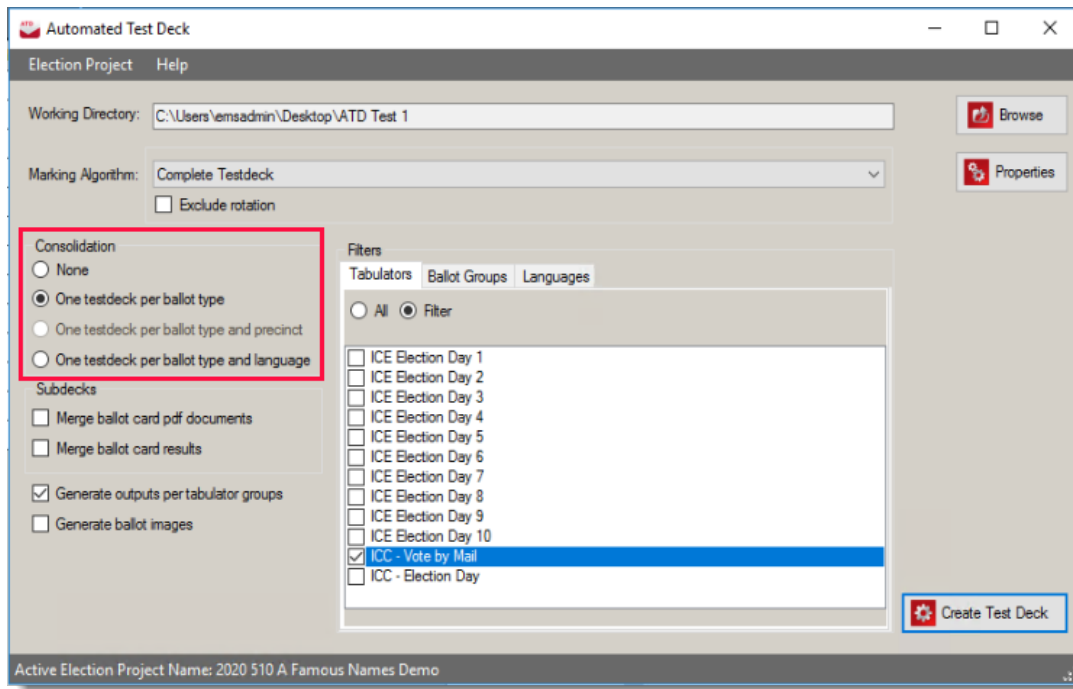


Figure 3-4: Consolidation options

The examples and explanations below feature a project with 10 precincts, 4 ballot content language profiles and 40 Ballot IDs (barcodes). The table below reflects each of the possible precincts in the project, its ballot type and all associated ballot IDs (barcodes).

Precinct	Ballot Type	English / Spanish Ballot ID	English / Chinese Ballot ID	English / Tagalog Ballot ID	English / Vietnamese Ballot ID
10101	BT 1	1	2	3	4
10102	BT 1	5	6	7	8
10103	BT 1	9	10	11	12
10104	BT 1	13	14	15	16
10105	BT 1	17	18	19	20
10106	BT 2	21	22	23	24
10107	BT 2	25	26	27	28
10108	BT 2	29	30	31	32
10109	BT 2	33	34	35	36
10110	BT 3	37	38	39	40

Figure 3-5: Consolidation example

If consolidation is not set test deck will be generated for each ballot card.

User can choose to create one test deck per ballot type.

For ICX test decks there are additional consolidation levels available:

- One test deck per ballot type and precinct
- One test deck per ballot type and language

<b>Without Consolidation</b>				
<b>Tab</b>	<b>Language</b>	<b>Activation Code</b>	<b>Ball Type</b>	<b>Ballot Card Description</b>
Tab1	English	0001	Bt1-prec1,prec2	BT1-English
Tab1	English	0002	Bt1-prec1,prec2	BT1-English
Tab1	English	0003	Bt2-prec3	BT2-English
Tab1	Spanish	0001	Bt1-prec1,prec2	BT1-Spanish
Tab1	Spanish	0002	Bt1-prec1,prec2	BT1-Spanish
Tab1	Spanish	0003	Bt2-prec3	BT2-Spanish

Table 3-1: Without Consolidation

<b>One Test Deck per Ballot Type and Language</b>				
<b>Tab</b>	<b>Language</b>	<b>Activation Code</b>	<b>Ball Type</b>	<b>Ballot Card Description</b>
Tab1	English	0001	Bt1-prec1,prec2	BT1-English
Tab1	English	0003	Bt2-prec3	BT2-English
Tab1	Spanish	0001	Bt1-prec1,prec2	BT1-Spanish
Tab1	Spanish	0003	Bt2-prec3	BT2-Spanish

Table 3-2: One Test Deck per Ballot Type and Language

<b>One Test Deck per Ballot Type and Precinct</b>				
<b>Tab</b>	<b>Language</b>	<b>Activation Code</b>	<b>Ball Type</b>	<b>Ballot Card Description</b>
Tab1	English	0001	Bt1-prec1,prec2	BT1-English
Tab1	English	0002	Bt1-prec1,prec2	BT1-English
Tab1	English	0003	Bt2-prec3	BT2-English

Table 3-3: One Test Deck per Ballot Type and Precinct

<b>One Test Deck per Ballot Type</b>				
<b>Tab</b>	<b>Language</b>	<b>Activation Code</b>	<b>Ball Type</b>	<b>Ballot Card Description</b>
Tab1	English	0001	Bt1-prec1,prec2	BT1-English
Tab1	English	0003	Bt2-prec3	BT2-English

Table 3-4: One Test deck per Ballot Type

Additionally, when consolidating test decks only by ballot type, a language can be specified from the **Languages** filter tab. If multiple languages are selected in this case, the first one in the list will apply.

### 3.1.1 Consolidation options

The available options are:

- None
- One testdeck per ballot type
- One testdeck per ballot type and language

#### 3.1.1.1 None

This option will create a deck and / or subdeck with the user's selections for each Precinct/Ballot ID in the election project. This will include all precincts and language profiles.



If a user selects **None** for consolidation, the decks created would be covering the following ballot IDs:

Precinct	Ballot Type	English / Spanish Ballot ID	English / Chinese Ballot ID	English / Tagalog Ballot ID	English / Vietnamese Ballot ID
10101	BT 1	1	2	3	4
10102	BT 1	5	6	7	8
10103	BT 1	9	10	11	12
10104	BT 1	13	14	15	16
10105	BT 1	17	18	19	20
10106	BT 2	21	22	23	24
10107	BT 2	25	26	27	28
10108	BT 2	29	30	31	32
10109	BT 2	33	34	35	36
10110	BT 3	37	38	39	40

Figure 3-6: None consolidation

### 3.1.1.2 One testdeck per ballot type

This option will create a deck and / or subdeck with the user's selections for each ballot type in the election project and each ballot type applicable to the user's other selections (specifically tabulator and ballot group). If the project contains multiple language profiles, this deck will only select the first language profile (See section “One testdeck per ballot type and language” on page 17 for creating ballot type test decks for multiple language profiles).

### Considerations for creating ballot type test decks in projects with precinct-assigned tabulators

The number of decks produced by the ballot type test deck depends largely on the tabulators selected in the filters area. The application will produce, at a minimum, a deck that is valid (e.g. able to be tabulated) for each tabulator, and that tabulator's associated precincts, in the selection. If the project has precinct-level tabulators, then this will create a deck for every precinct. If the desired output is only the ballot types in the project, then a tabulator with all precincts assigned should be the only selection made in the Tabulators area.

## Ballot Type outputs for projects with precinct assigned tabulators

Tabulator	Associated Precincts	Ballot Type
ICE Election Day 1	10101	BT 1
ICE Election Day 2	10102	BT 1
ICE Election Day 3	10103	BT 1
ICE Election Day 4	10104	BT 1
ICE Election Day 5	10105	BT 1
ICE Election Day 6	10106	BT 2
ICE Election Day 7	10107	BT 2
ICE Election Day 8	10108	BT 2
ICE Election Day 9	10109	BT 2
ICE Election Day 10	10110	BT 3
ICC Vote by Mail	10101, 10102, 10103, 10104, 10105, 10106, 10107, 10108, 10109, 10110	BT 1, BT 2, BT 3
ICC Election Day	10101, 10102, 10103, 10104, 10105, 10106, 10107, 10108, 10109, 10110	BT 1, BT 2, BT 3

Figure 3-7: Sample tabulator configuration

Test decks generated based on tabulator selection:

### Example 1:

- Consolidation Option Selected = One Testdeck per ballot type
- Tabulators Selected = Single ICC (associated with all precincts)

Once the deck is created, the following items are available:

- One deck/pdf for each ballot type across all selected tabulators
- Because the selected tabulator tabulates all precincts, a deck is only created for each unique ballot type
- The precinct selected is the first precinct associated with that particular ballot type

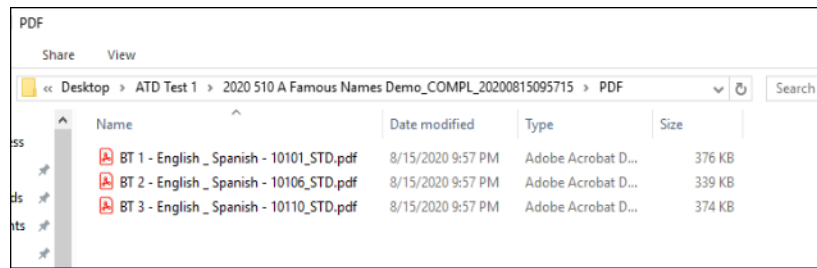


Figure 3-8: PDF decks

Precinct	Ballot Type	English / Spanish Ballot ID	English / Chinese Ballot ID	English / Tagalog Ballot ID	English / Vietnamese Ballot ID
10101	BT 1	1			
10102	BT 1				
10103	BT 1				
10104	BT 1				
10105	BT 1				
10106	BT 2	21			
10107	BT 2				
10108	BT 2				
10109	BT 2				
10110	BT 3	37			

Figure 3-9: Example 1 table

**Example 2:**

- Consolidation Option Selected = One Testdeck per ballot type
- Tabulators selected = All (Default)

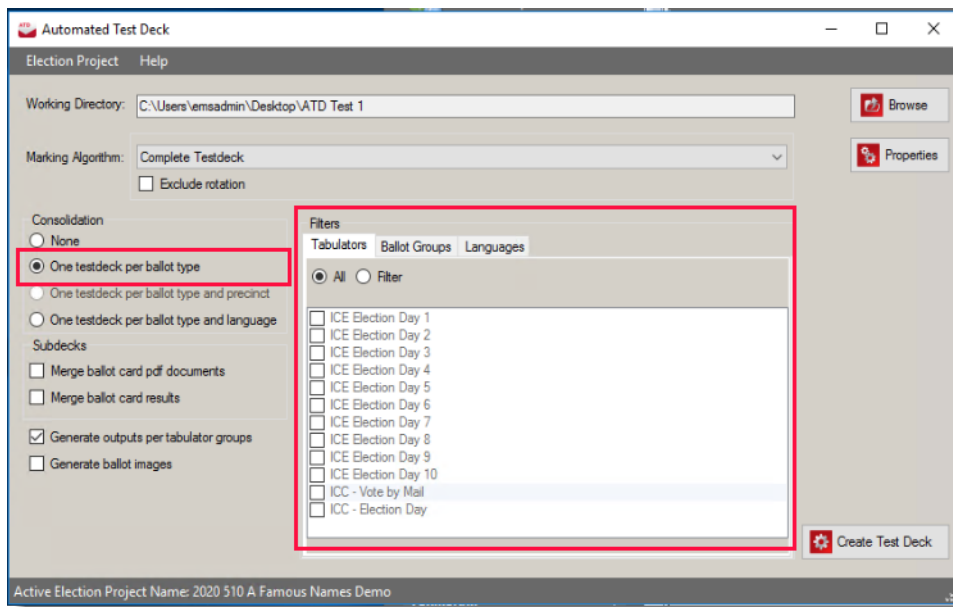


Figure 3-10: One testdeck per ballot type

Once the deck is created, the following items are available:

- One deck/pdf for each ballot type across all selected tabulators
- This results in a deck for each precinct
- Language selected is the first language profile

Precinct	Ballot Type	English / Spanish Ballot ID	English / Chinese Ballot ID	English / Tagalog Ballot ID	English / Vietnamese Ballot ID
10101	BT 1	1			
10102	BT 1	5			
10103	BT 1	9			
10104	BT 1	13			
10105	BT 1	17			
10106	BT 2	21			
10107	BT 2	25			
10108	BT 2	29			
10109	BT 2	33			
10110	BT 3	37			

Figure 3-11: Example 2 table

### 3.1.1.3 One testdeck per ballot type and language

This option will create a deck and / or subdeck for each ballot type, based on the user's other applicable selections for tabulators and language profiles. As mentioned in the previous section, the amount of test decks created will also be impacted by the users' selections on the Tabulators tab.

#### Example 1:

- Consolidation Option Selected = One Testdeck per ballot type and language
- Tabulators selected = Single ICC (associated with all precincts)
- Languages Selected = All (Default)

Once the deck is created, the following items are available:

- One deck/pdf for each ballot type across all selected tabulators
- The selected tabulator tabulates all precincts, a deck is only created for each unique ballot type
- All languages are selected so a deck is created for each Ballot Type + Language profile

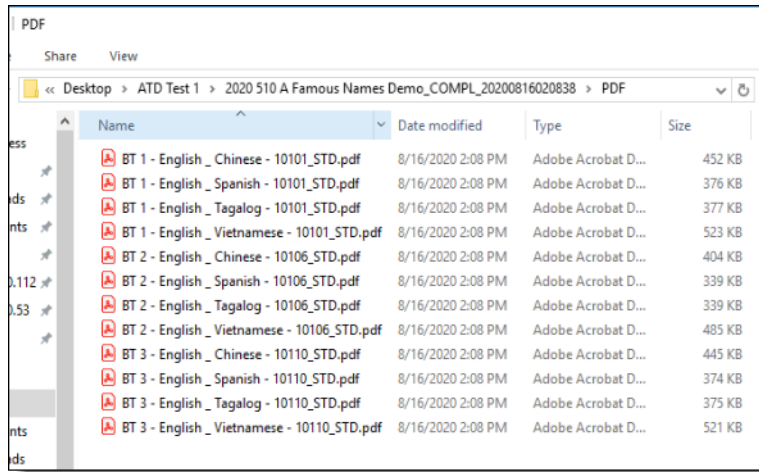


Figure 3-12: PDF decks

Precinct	Ballot Type	English / Spanish Ballot ID	English / Chinese Ballot ID	English / Tagalog Ballot ID	English / Vietnamese Ballot ID
10101	BT 1	1	2	3	4
10102	BT 1				
10103	BT 1				
10104	BT 1				
10105	BT 1				
10106	BT 2	21	22	23	24
10107	BT 2				
10108	BT 2				
10109	BT 2				
10110	BT 3	37	38	39	40

Figure 3-13: Example 1 table

**Example 2:**

- Consolidation Option Selected = One Testdeck per ballot type and language
- Tabulators selected = Single ICC (associated with all precincts)
- Languages Selected = English / Spanish & English / Chinese

Once the deck is created, the following items are available:

- One deck/pdf for each ballot type across all selected tabulators
- The selected tabulator tabulates all precincts, a deck is only created for each unique ballot type
- Only two languages are selected so a deck is created for all ballot types but only for the selected languages

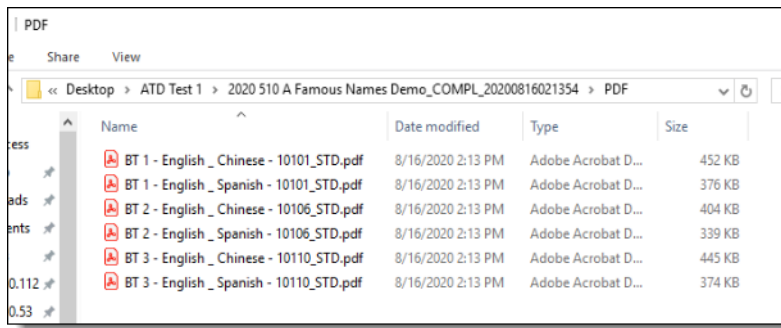


Figure 3-14: PDF decks

Precinct	Ballot Type	English / Spanish Ballot ID	English / Chinese Ballot ID	English / Tagalog Ballot ID	English / Vietnamese Ballot ID
10101	BT 1	1	2		
10102	BT 1				
10103	BT 1				
10104	BT 1				
10105	BT 1				
10106	BT 2	21	22		
10107	BT 2				
10108	BT 2				
10109	BT 2				
10110	BT 3	37	38		

Figure 3-15: Example 2 table

## CHAPTER 4: AVAILABLE TEST DECKS

This chapter describes all available test decks.

### 4.1 Default

#### 4.1.1 First Position Test Deck

This test deck applies first position marking pattern:

##### **First position marking pattern**

This pattern will mark first position(s) on each contest. For example, if vote for is one, first choice will be marked, if vote for is two first two choices will be marked, if vote for is three first three choices will be marked, etc.

Contest1 (vote for one):

Choice1: 1

Choice2: 0

Choice3: 0

Choice4: 0

Contest2 (vote for two):

Choice1: 1

Choice2: 1

Choice3: 0

Choice4: 0

##### **Properties**

Besides drawing properties described in the section Drawing properties, this test deck does not have additional configuration properties.

#### 4.1.2 Simple Test Deck

This test deck applies Simple marking pattern:

##### **Simple marking pattern**

The purpose of this pattern is to mark each voting box once including write-ins. On each ballot in each contest the allowed “vote for” will be marked, each

subsequent ballot will mark the next allowed “vote for”, until choices run out in each contest.

Contest1 (vote for one):

Choice1: 1

Choice2: 1

Choice3: 1

Choice4: 1

Contest2 (vote for two):

Choice1: 1

Choice2: 1

Choice3: 1

Choice4: 1

## **Properties**

Besides drawing properties described in the section Drawing properties, this test deck does not have additional configuration properties.

### **4.1.3 Complete Test Deck**

This test deck contains the following subdecks:

- Standard/Reversed subdeck which applies 1,2,3... marking pattern
- SubDeck with special (“exceptional”) ballots

#### **1,2,3... Marking pattern**

This voting pattern is the same as the simple pattern, except that if you were to number the individual ballots in the simple pattern from 1 to n, then each ballot would be multiplied by that number. So, ballot 1 from simple pattern is shown once, ballot 2 is shown twice, ballot 3 is shown thrice, etc. If this pattern is applied with default settings it will give each choice within a contest a unique number of marks(votes):

Contest1 (vote for one):

Choice1: 1

Choice2: 2

Choice3: 3

Choice4: 4



Contest2 (vote for two):

Choice1: 1

Choice2: 2

Choice3: 3

Choice4: 4

## Properties

Besides drawing properties described in the section Drawing properties, this test deck has the following additional configuration properties:

### Marking pattern:

- Create Additional Ballots:

Flag indicating whether subdeck with exceptional ballots should be created.

### Additional options for 1,2,3 marking pattern

- Include Write-ins: Flag indicating whether write-ins will be marked. Default value is True.
- Limit: Maximum number of votes per candidate in pattern. Default value is -1, which means there is no limitation.  
For example, if we set 3, we will produce 1-2-3-1-2-3... pattern
- Pattern: User can choose to apply Standard, Reversed or Both pattern.  
In the Standard pattern votes will increment (1,2,3,4...), in the Reversed pattern votes will decrement (4,3,2,1).
- Pattern Skip: The number of voting boxes to skip between each pattern.  
Default value is 0. (Do not skip any voting position)

### Additional Ballots:

In this section users can choose which exceptional ballots should be included in test deck:

- **Ballot with Marginal Mark:** Flag which indicates whether ballot with marginal mark should be included. A ballot with a marginal mark will produce a ballot with a percentage of the target area filled in (as defined by the Marginal Fill Factor parameter).

**NOTE:** This setting may need to be used in conjunction with Voting Box parameters for: **Background is Red**, **Background Radius factor**, and **Use Background** depending on whether the jurisdiction is using red or black ovals.

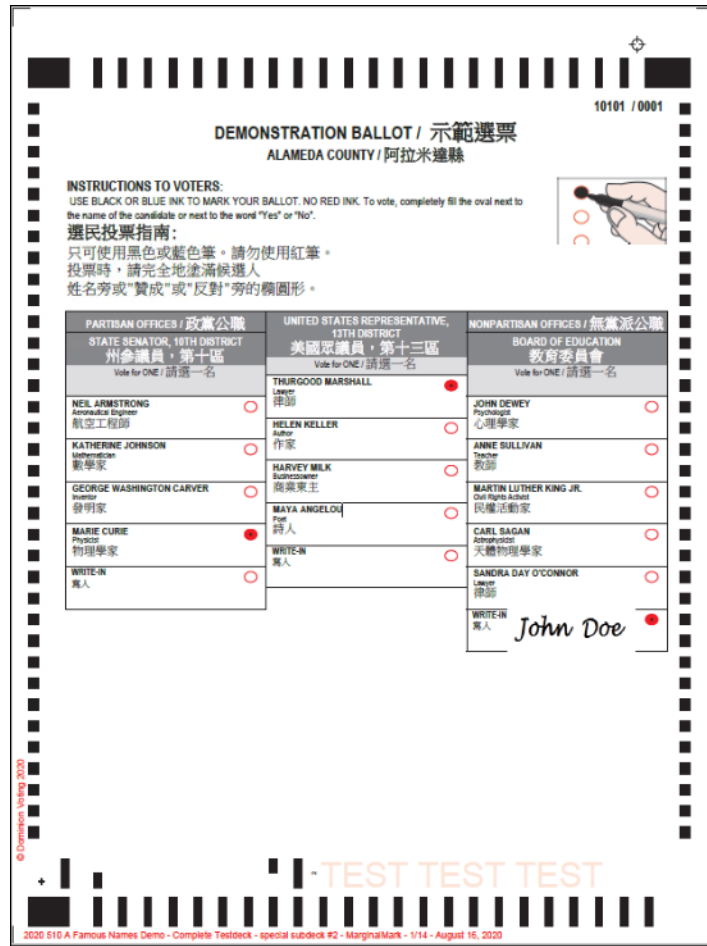


Figure 4-1: Ballot with Marginal Mark

- Marginal Fill Factor Start (%):** Percentage of voting target that should be filled that will be used for the starting range of marginal ballot markings. This can be used with the Marginal Fill Factors End parameter to produce a special deck with a defined range of markings within the range defined.

STATE SENATOR, 10TH DISTRICT 州參議員，第十區	
Vote for ONE / 請選一名	
NEIL ARMSTRONG Aeronautical Engineer 航空工程師	<input type="radio"/>
KATHERINE JOHNSON Mathematician 數學家	<input type="radio"/>
GEORGE WASHINGTON CARVER Inventor 發明家	<input type="radio"/>
MARIE CURIE Physicist 物理學家	<input checked="" type="radio"/>
WRITE-IN 寫入	<input type="radio"/>

Figure 4-2: Contest marked with 7% Marginal Fill Factor

STATE SENATOR, 10TH DISTRICT 州參議員，第十區	
Vote for ONE / 請選一名	
NEIL ARMSTRONG Aeronautical Engineer 航空工程師	<input type="radio"/>
KATHERINE JOHNSON Mathematician 數學家	<input type="radio"/>
GEORGE WASHINGTON CARVER Inventor 發明家	<input checked="" type="radio"/>
MARIE CURIE Physicist 物理學家	<input type="radio"/>
WRITE-IN 寫入	<input type="radio"/>

Figure 4-3: Contest marked with 20% Marginal Fill Factor

- Marginal Fill Factors End (%):** Percentage of voting target that should be filled that will be used for the ending range of marginal ballot markings. This can be used with the **Marginal Fill Factors Start** parameter to produce a special deck with a defined range of markings within the range defined.

**NOTE:** If the user does not wish to produce a range of ballots with marginal markings then Marginal Fill Factors Start and Marginal Fill Factors End can be set to the same value, and only one ballot will be produced.

- **Marginal Fill Factors Step (%):** The number by which the ballots within the marginal fill should be incremented.

The default is 1, meaning, if the following parameters are set:

- Marginal Fill Factors Start (%) = 7
- Marginal Fill Factors End (%) = 15
- Marginal Fill Factors Step (%) = 1

Then the following ballots with marginal fills will be produced:

- 1 ballot = Marginal fill factor = 7%
- 1 ballot = Marginal fill factor = 8%
- 1 ballot = Marginal fill factor = 9%
- 1 ballot = Marginal fill factor = 10%
- 1 ballot = Marginal fill factor = 11%
- 1 ballot = Marginal fill factor = 12%
- 1 ballot = Marginal fill factor = 13%
- 1 ballot = Marginal fill factor = 14%
- 1 ballot = Marginal fill factor = 15%

To reduce the number of ballots produced, but test the entire range of potential marginal marks, the Step factor may be changed. If this is changed to 2, leaving the Fill Factor Start and End settings exactly the same, the following ballots with marginal fills will be produced.

Then the following ballots with marginal fills will be produced:

- 1 ballot = Marginal fill factor = 7%
- 1 ballot = Marginal fill factor = 9%
- 1 ballot = Marginal fill factor = 11%
- 1 ballot = Marginal fill factor = 13%
- 1 ballot = Marginal fill factor = 15%

- **Ballot with Print Error:** This flag which indicates whether ballot with a print error should be included. It will produce a ballot that will not tabulate (due to a missing top left corner marker) and can be used to test tabulator's handling of misread ballots.

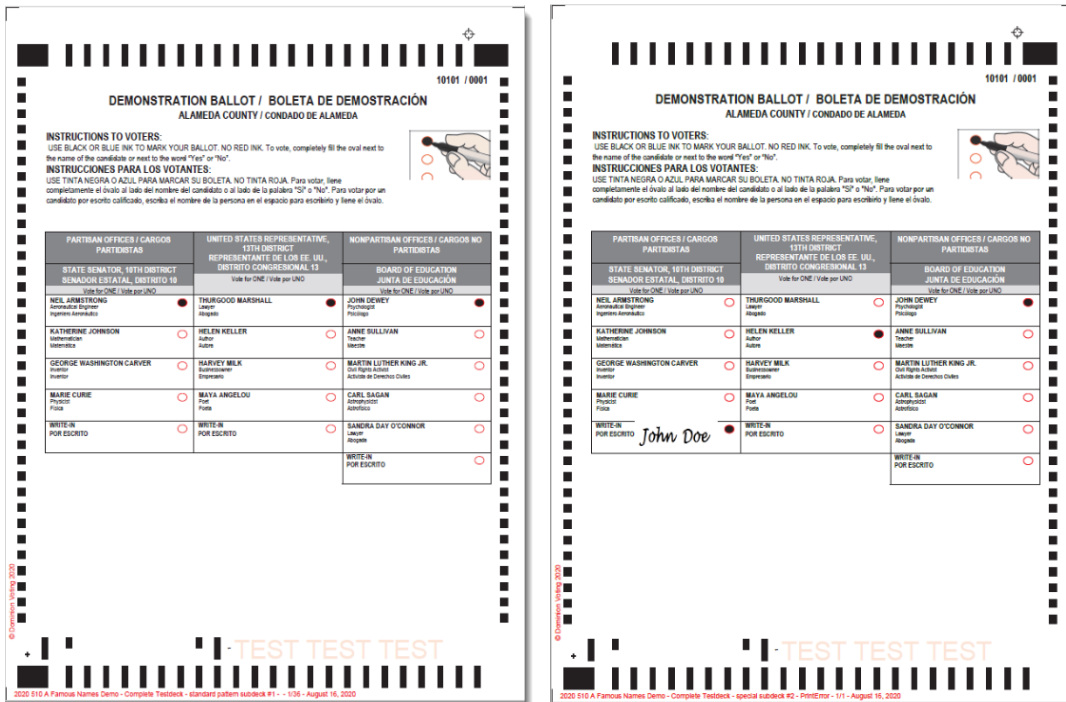


Figure 4-4: Ballot with no print error (left) / Ballot with print error (right)

- **Ballot with Stray Marks:** Flag which indicates whether ballot with stray marks should be included. This will produce a ballot with stray marks in multiple areas of the ballot.



Figure 4-5: Ballot with Stray Marks

- **Ballot with Wrong Id:** Flag which indicates whether ballot with a wrong id should be included. This will produce a ballot with a ballot ID that is not relevant for the project. It can/may be used to test the tabulator's handling of misread ballots.

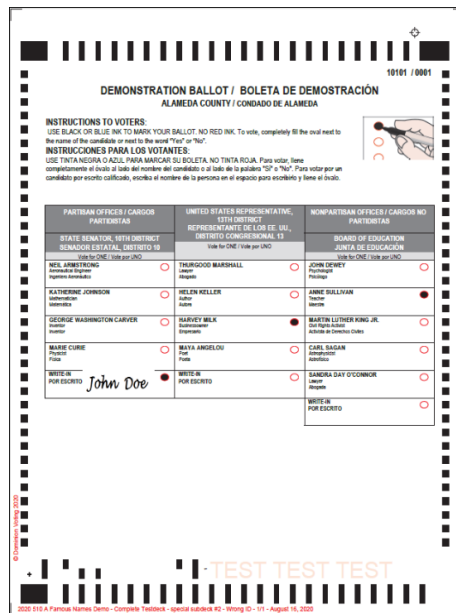


Figure 4-6: Ballot with Wrong Id

- **Blank Ballot:** Flag which indicates whether blank ballot should be included. This will produce an entirely blank ballot with no marks in any target area.

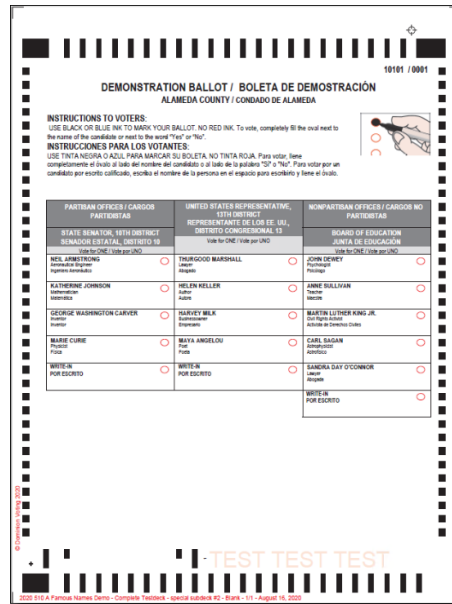


Figure 4-7: Blank Ballot

- **Full Voted Ballot:** Flag which indicates whether full voted ballot should be included. This will produce a fully voted valid ballot (e.g. a valid vote for every contest on each ballot included).

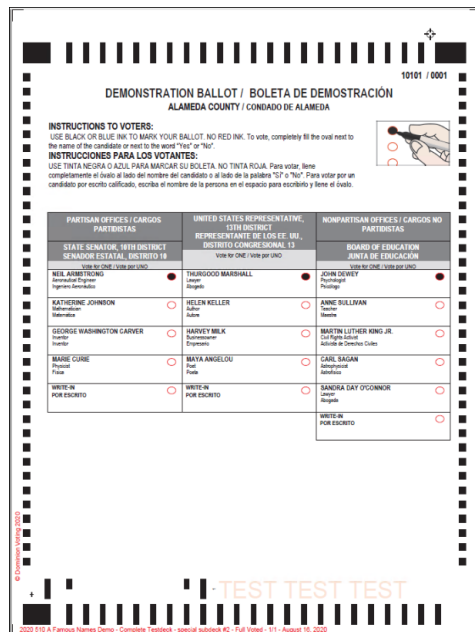


Figure 4-8: Full Voted Ballot

- **Mark All Voting Boxes:** Flag which indicates whether full ballot (with all voting boxes marked) should be included. This will produce a ballot with a mark in every potential voting target on the ballot.

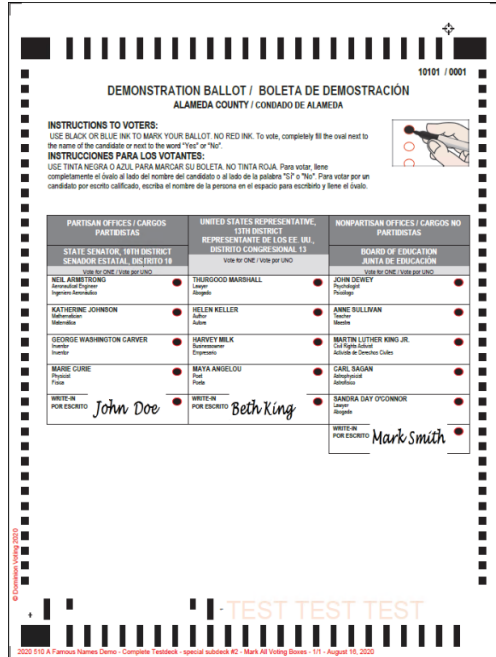


Figure 4-9: Mark All Voting Boxes

- **Overvoted Ballot:** Flag which indicates whether overvoted ballot should be included. This will produce a ballot with an overvote by one in each contest.



- For Vote for One contests this will produce two votes:

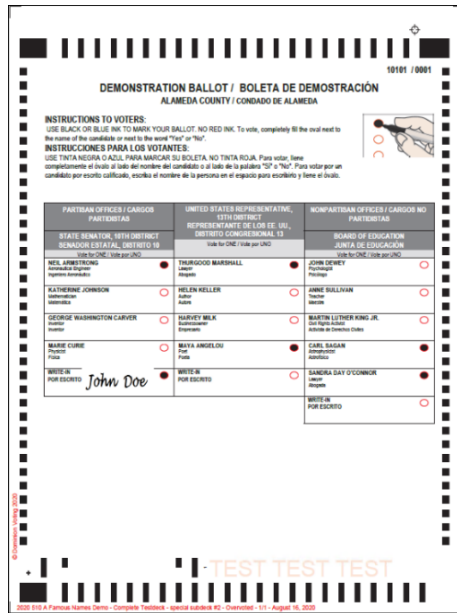


Figure 4-10: Overvoted ballot - Vote for one contest

- For multi-vote contests this will produce one vote more than the allowed number of votes

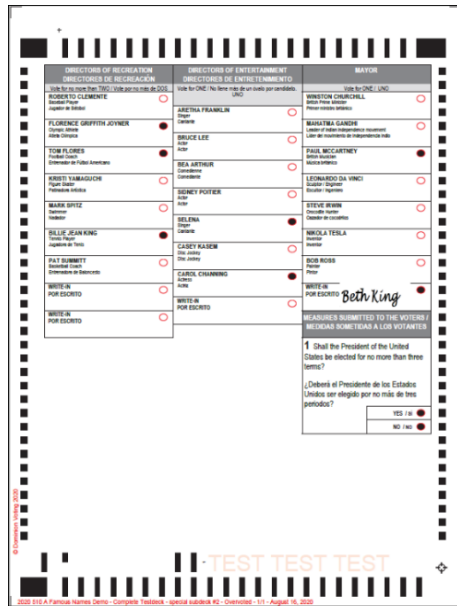


Figure 4-11: Overvoted ballot - Multi-vote contest

- **Undervoted Ballot:** Flag which indicates whether undervoted ballot should be included. This will produce a ballot with one less vote than the total number of allowed votes in each contest.

- For Vote for One contests this will produce zero votes

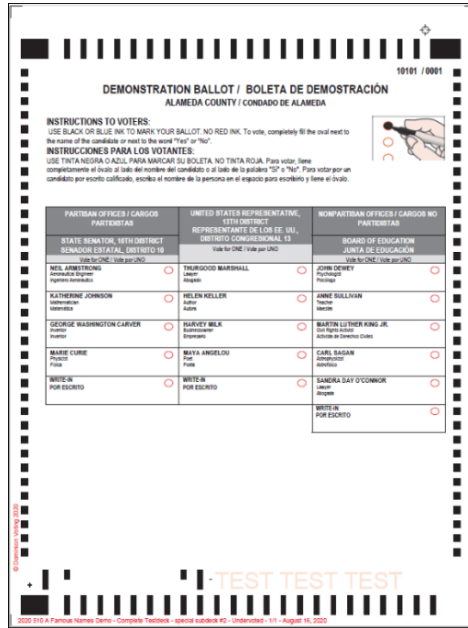


Figure 4-12: Undervoted ballot - Vote for one contest

- For multi-vote contests this will produce one vote less than the allowed number of votes

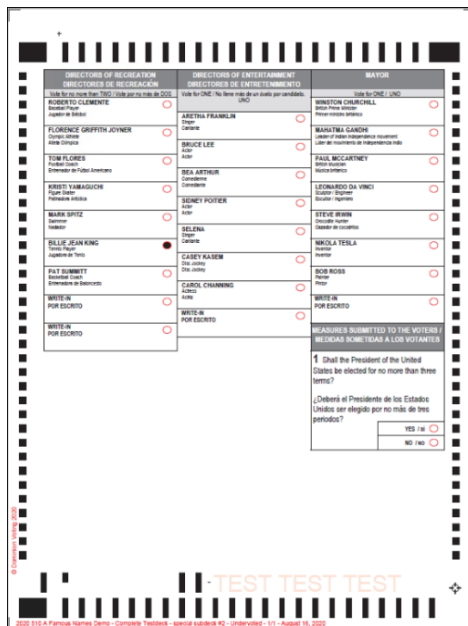


Figure 4-13: Undervoted ballot - Multi-vote contest

## Rank Choice Voting

If the Election Project contains RCV ballots, then the user may choose to include RCV exceptions along with their exception deck.

To access and choose which exceptions to include, the project must have an RCV contest defined. From the Test Deck properties area- users can expand the Rank Choice Voting submenu by clicking on the arrow next to it.

Four types of rank choice voting exceptions are available. The dropdown should be changed to **True** to include a ballot with that exception.

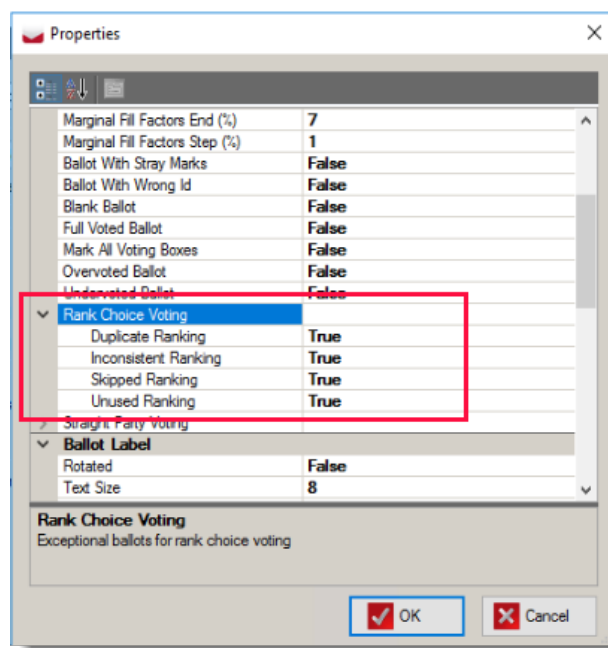


Figure 4-14: RCV choices

In the **Rank Choice Voting** section user can choose to include additional exceptional ballots specific for rank choice voting:

- **Duplicate Ranking:** This will produce a ballot with a marking made for the same candidate in multiple rankings (e.g. 1st and 2nd Rank marked for the same Choice Name).

**DEMONSTRATION BALLOT**  
ALAMEDA COUNTY

**LÁ PHIẾU TRÌNH DIỄN**  
QUẬN ALAMEDA

**RANKED CHOICE VOTING / BẦU PHIẾU THEO THỨ HẠNG LỰA CHỌN**

**INSTRUCTIONS TO VOTERS:**

- Rank your top 5th choice in the columns below.
- Vote from left to right in order of your preference.
- To vote, completely fill in the oval next to your choice.

**CÁC HƯỚNG DẪN CHO CỬ TRƯ:**

- Xếp hạng sự lựa chọn thứ nhất - thứ năm của quý vị trong các cột bên dưới.
- Bầu phiếu từ trái sang phải theo thứ tự ưu tiên của quý vị.
- Để bầu phiếu, hãy điền đầy đủ vào hình bầu dục bên cạnh sự lựa chọn của quý vị.

**RANKED CHOICE VOTING CONTEST**  
CUỘC BẦU PHIẾU THEO THỨ HẠNG LỰA CHỌN

**DIRECTORS OF ENTERTAINMENT**  
CÁC GIÁM ĐỐC VĂN NGHỆ

Fill in no more than 1 oval per candidate.  
Hãy điền vào không quá 1 hình bầu dục cho mỗi ứng cử viên.

	1st Choice Lựa chọn hạng thứ nhất	2nd Choice Lựa chọn hạng thứ hai	3rd Choice Lựa chọn hạng thứ ba	4th Choice Lựa chọn hạng thứ tư	5th Choice Lựa chọn hạng thứ năm
<b>ARETHA FRANKLIN</b> Singer Ca sĩ	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>BRUCE LEE</b> Actor Diễn viên	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>BEA ARTHUR</b> Comedian Diễn viên hài	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>SIDNEY POTTER</b> Actor Diễn viên	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
<b>SELENA</b> Singer Ca sĩ	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
<b>CASEY KASEM</b> Disc jockey Người DJ	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>CAROL CHANNING</b> Actress Nữ diễn viên	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>WRITE IN</b> VIẾT TIỀN	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10110 BT: 2  
RCV Card

**TEST TEST TEST**

Alameda County RCV Demo Election - Complete Testdeck - special subbook #2 - Duplicate Ranking - 1A - August 17, 2022

Figure 4-15: Duplicate Ranking

- **Inconsistent Ranking:** This will produce a ballot with a marking made for the same choice in multiple rankings.

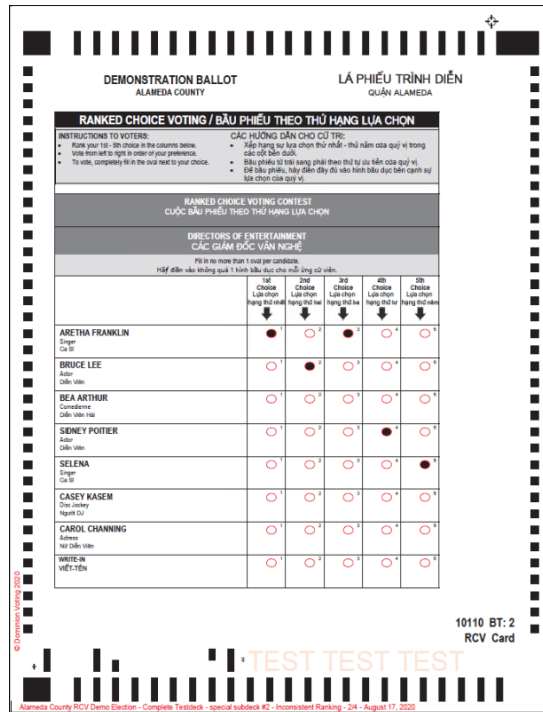


Figure 4-16: Inconsistent Ranking

- **Skipped Ranking:** This will produce a ballot with a ranking skipped (e.g. 1,3,4,5) and no vote made for the 2nd ranking.

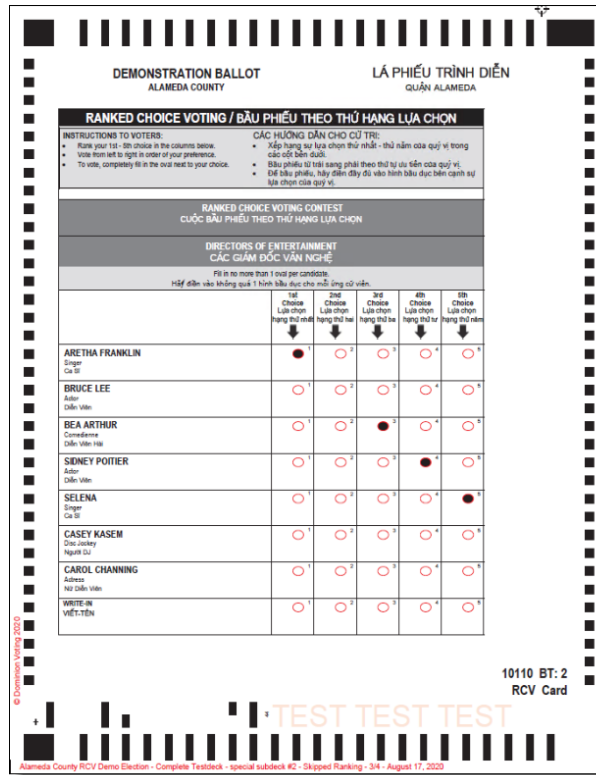


Figure 4-17: Skipped Ranking

- **Unused Ranking:** This will produce a ballot with an unused ranking, meaning the ballot is marked with less ranks than allowed.

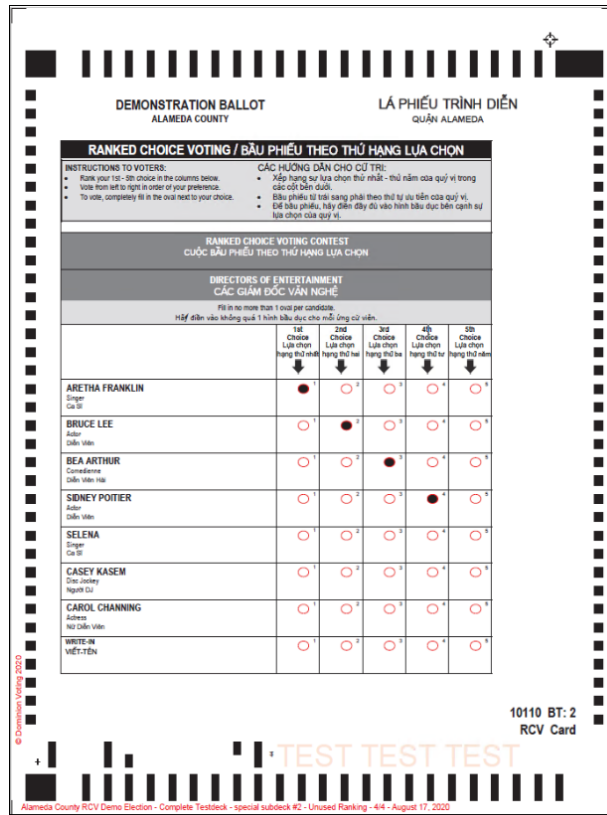


Figure 4-18: Unused Ranking

In the **Straight Party Voting** section user can choose to include additional ballots specific for straight party voting.

Applies only to those ballots that have straight party contest.

- **Straight Party Selection:** Flag which indicates whether ballot with only straight party selection should be included. Produces a ballot with a straight party vote only. (One for each of the parties in straight party ticket).
- **Straight Party Selection Overriding:** Flag which indicates whether ballot with straight party selection overriding should be included. For each of the parties in straight party ticket produces a ballot with a straight party vote and crossover votes (votes for candidates of a different parties).

#### 4.1.4 All combinations marking pattern

The purpose of this pattern is to produce a deck of marked ballots for multi-votes with all potential voting combinations without repetition.

There are two test desks that mark all combinations:

- **All combinations Test Deck**

- **ICX all combinations test deck**

For example - In a multi-vote (e.g. Vote for 2) it will mark all combinations of two votes. If the contest has 3 choices (A, B and C) the deck contains the following combinations of marked choices: AB, AC, BC. Each subsequent ballot will have the next choice combination marked inside of each contest, until the number of possible combinations run out in each contests.

**NOTE:** The write in choices in this test deck are treated as regular choices. This pattern does not mark choices inside of RCV and Straight Party Voting contests.

Example:

For the ballot type in this example, there are 7 contests of which 6 of the contests are standard *Vote for One* contests, while one contest allows the voters to make 2 selections.

Contest	Vote For	Number of Choices
State Senator 10th District	1	5
United States Representative 13th District	1	5
Board of Education	1	6
Directors of Education	2	9
Directors of Entertainment	1	8
Mayor	1	8
Prop 1	1	2

Figure 4-19: All combinations example

The **All Combinations** marking pattern will produce a deck with:

- Each of the choices in the single vote contests marked one time.
- Each of the combinations of choices in the Multiple vote contests marked one time.



Marked PDF	State Senator 10th District Position marked	United States Representative 13th District Position marked	Board of Education Position marked	Directors of Education Combinations marked	Directors of Entertainment Position marked	Mayor Position marked	Prop 1 Position marked
1	1	1	1	1,2		1	1
2	2	2	2	1,3		2	2
3	3	3	3	1,4		3	3
4	4	4	4	1,5		4	4
5	5	5	5	1,6		5	5
6				6		6	6
7				1,8		7	7
8				1,9		8	8
9				2,3			
10				2,4			
11				2,5			
12				2,6			
13				2,7			
14				2,8			
15				2,9			
16				3,4			
17				3,5			
18				3,6			
19				3,7			
20				3,8			
21				3,9			
22				4,5			
23				4,6			
24				4,7			
25				4,8			
26				4,9			
27				5,6			
28				5,7			
29				5,8			
30				5,9			
31				6,7			
32				6,8			
33				6,9			
34				7,8			
35				7,9			
36				8,9			

Figure 4-20: All combinations marking pattern

#### 4.1.4.1 Merge ballot card PDF documents

There are two options for handling sub-decks. Sub-decks are created when generating a Complete Testdeck and setting the **Create Additional Ballots** option to **True**. In this case, two PDFs are created:

- A filename ending in *SPL* - this PDF contains only the *exception* or additional ballots
- A filename ending in *STD* - this PDF contains only the ballots marked as part of the defined/repeating pattern

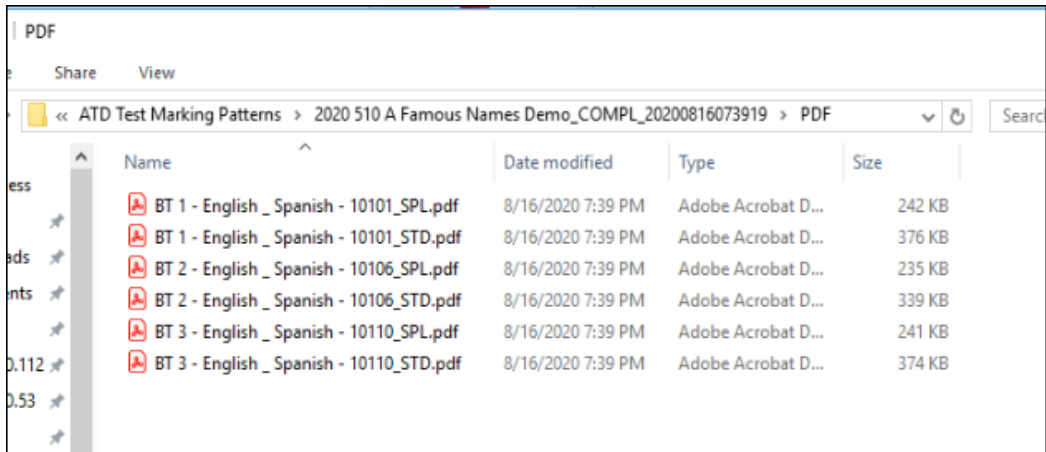


Figure 4-21: PDF documents

There are two options on the main screen that can help the user change the way the PDFs are generated. If the user selects Merge ballot card PDF documents, then the Special/Additional ballots and the standard ballots will be combined into one PDF.

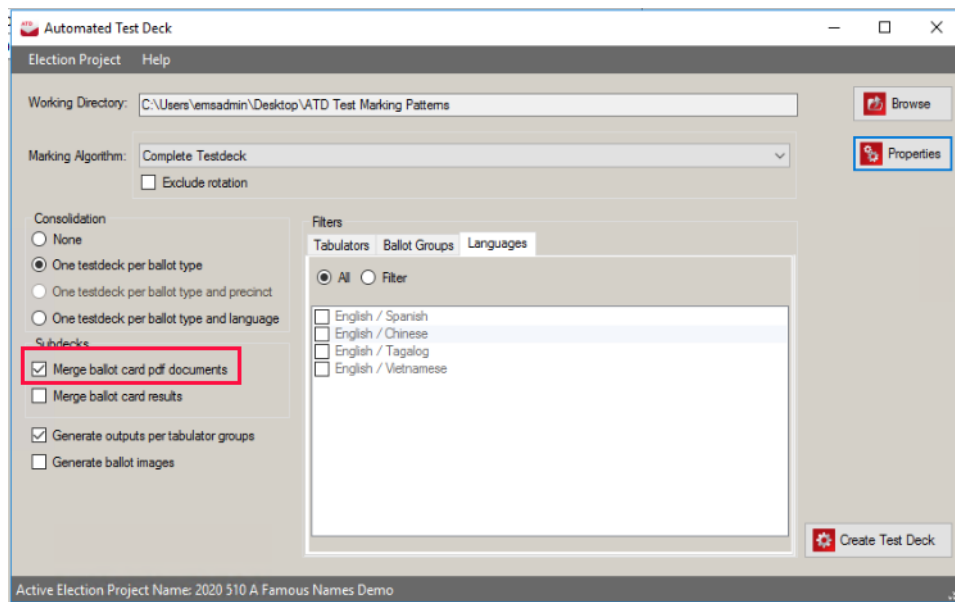


Figure 4-22: Merge ballot card pdf document option

The resulting combined PDF will end in 'COMPL'.

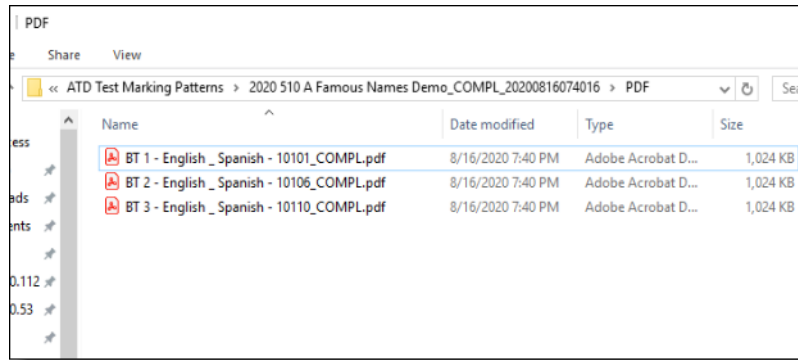


Figure 4-23: PDF document

#### 4.1.4.2 Merge ballot card results

When a complete test deck is generated including additional/exception ballots two sets of expected results, (in addition to the two PDF of marked ballots) are produced. If the results are not merged, then a separate set of results are produced for each deck.

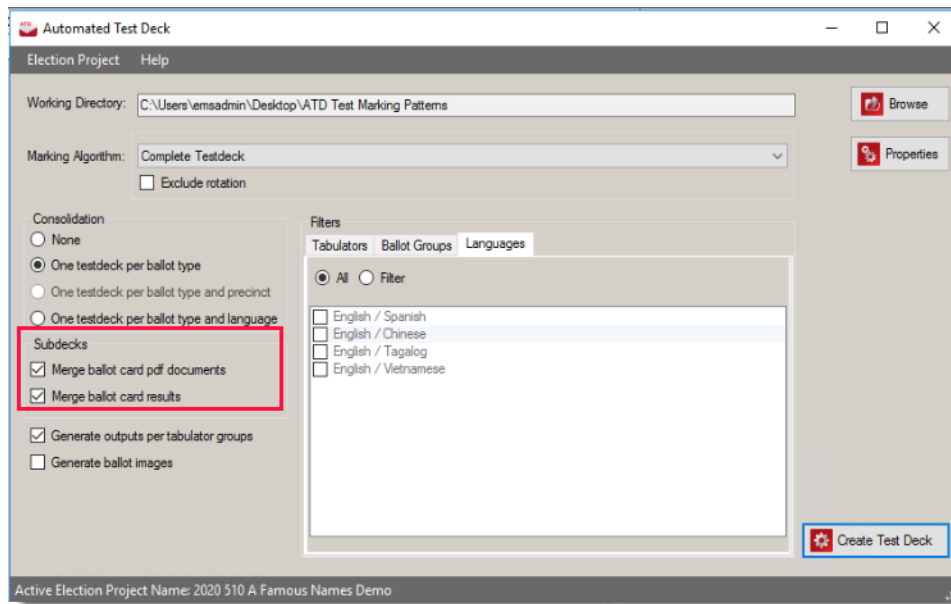


Figure 4-24: Merge ballot cards options

#### Results Not Merged

Two reports are created for expected results: One for the Standard Deck pattern and one for the Special Deck pattern.

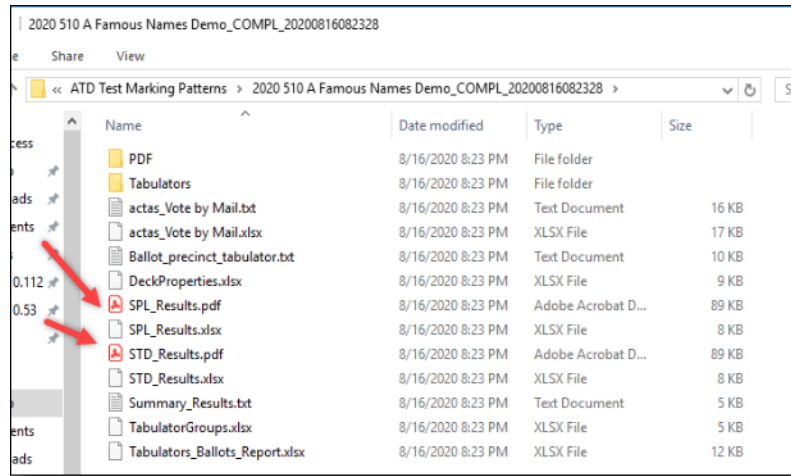


Figure 4-25: Non-merged PDF result files

The decks will have to be run separately, or the results of each deck will need to be published separately in order to match the expected results report.

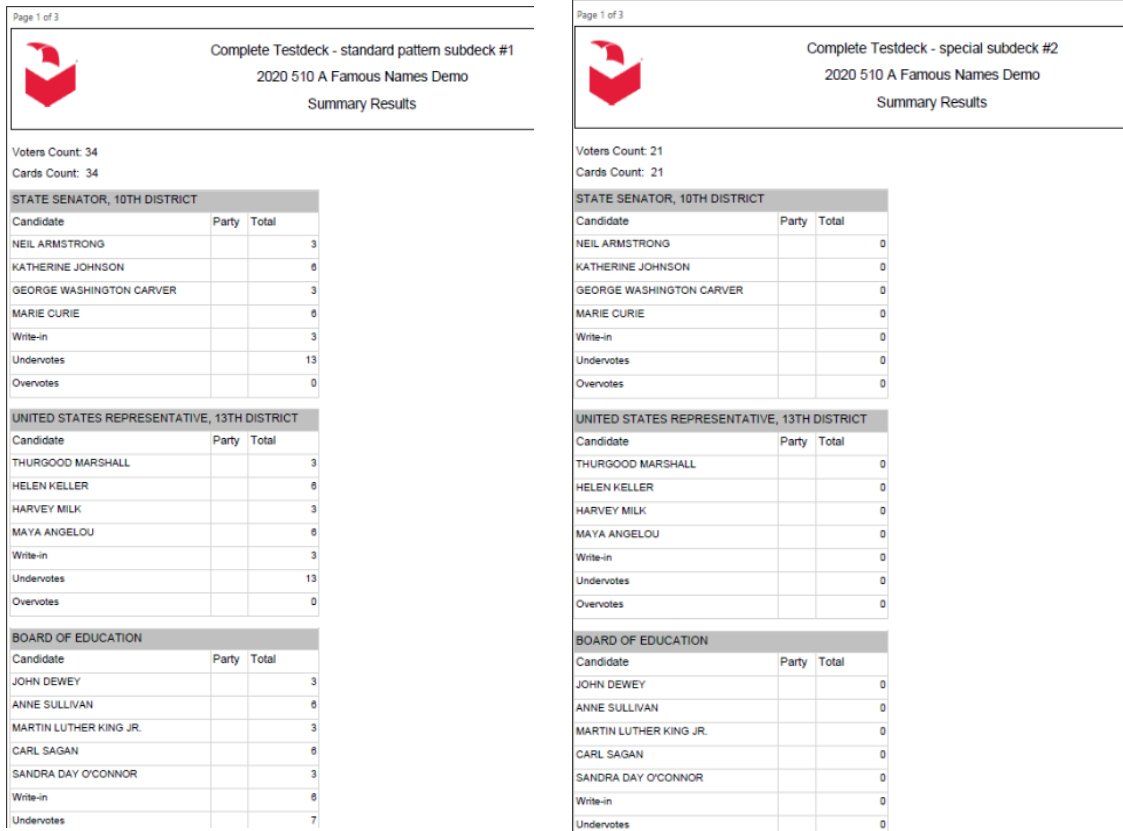


Figure 4-26: Standard Deck Expected Results (left) / Special Deck Expected Results (right)

### Merged Results

Only one report is created for expected results and it will contain the expected results for both decks.

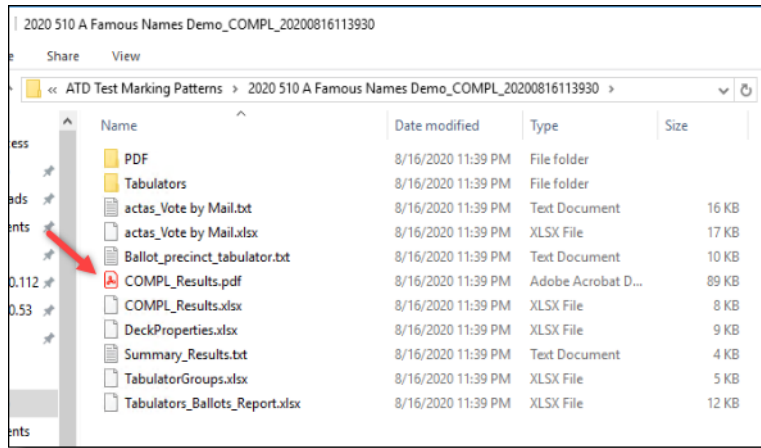



Figure 4-27: Merged Results PDF file

Page 1 of 3



**Complete Testdeck**  
2020 510 A Famous Names Demo  
Summary Results

Voters Count: 55  
Cards Count: 55

STATE SENATOR, 10TH DISTRICT		
Candidate	Party	Total
NEIL ARMSTRONG		3
KATHERINE JOHNSON		6
GEORGE WASHINGTON CARVER		3
MARIE CURIE		6
Write-in		3
Undervotes		13
Overvotes		0

UNITED STATES REPRESENTATIVE, 13TH DISTRICT		
Candidate	Party	Total
THURGOOD MARSHALL		3
HELEN KELLER		6
HARVEY MILK		3
MAYA ANGELOU		6
Write-in		3
Undervotes		13
Overvotes		0

BOARD OF EDUCATION		
Candidate	Party	Total
JOHN DEWEY		3
ANNE SULLIVAN		6
MARTIN LUTHER KING JR.		3
CARL SAGAN		6
SANDRA DAY O'CONNOR		3
Write-in		6
Undervotes		7

Figure 4-28: Merged Summary Results report

## 4.1.5 ICX VoteSim Test Decks

ICX VoteSim test decks produce files for testing ICX tabulators.

These test decks apply default marking patterns (First Position, Simple and Standard (1, 2, 3...)) and generate xml files for ICX Vote Simulator instead of paper ballots (pdf files).

### Properties

ICX VoteSim Test Decks have following configuration settings:

- • Test straight party selection: If election project contains straight party contests, user can create test deck with or without straight party selection.
  - Test deck without straight party selection will skip straight party contests. Selected pattern will be applied to all other contests.
  - Test deck with straight party selection will skip partisan contests (contests influenced by straight party contests). Selected pattern will be applied to all other contests. (Results in partisan contests depend on straight party selection)
- • Additional options for standard (1, 2, 3...) pattern
  - Force vote for one: Flag indicating whether to force voting for one candidate.
  - Include Blanks: if set to True it generates one blank ballot per ballot type.
  - Include write-ins: Flag indicating whether write-ins will be marked.
  - Limit: Maximum number of votes in pattern. Default value is -1, which means there is no limitation.
  - Pattern skip: The number of voting boxes to skip between each pattern. Default value is 0. (Do not skip any voting position)

**NOTE:** In order to get unique number of votes for each choice within contest , leave these four options as default.

- Reverse: Flag indicating whether to reverse pattern.  
If it is set to be true, we will get following result:  
Contest:  
Choice1: 4  
Choice2: 3  
Choice3: 2  
Choice4: 1

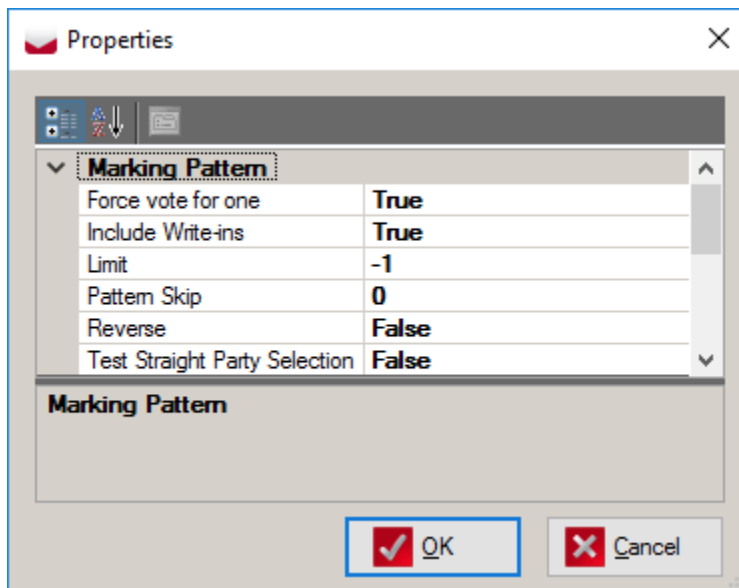


Figure 4-29: ICX VoteSim Test Deck Properties

## 4.2 Specific

### 4.2.1 NYS Test Decks

#### 4.2.1.1 NYS General Comprehensive Test Deck

NYS General Comprehensive Test deck contains the following subdecks:

- NYS General Comprehensive subdeck #1 – OS EV: this voting pattern implements the Election Verification subdeck for NYS general elections as described in [1] on page 20.
- NYS General Comprehensive subdeck #2 – OS Pattern: this voting pattern implements the Pattern subdeck for NYS general elections as described in [1] on page 48.
- NYS General Comprehensive subdeck #3 – OS OV: this voting pattern implements the overvote subdeck for NYS general elections as described in [1] on page 76.
- NYS General Comprehensive subdeck #4 – OS UV: this voting pattern implements the undervote subdeck for NYS general elections as described in [1] on page 95.
- NYS General Comprehensive subdeck #5 – OS CE: this voting pattern implements the cross-endorsement subdeck for NYS general elections as described in [1] on page 107.



- NYS General Comprehensive subdeck #6 – OS Random: this voting pattern implements the random subdeck for NYS general elections as describe in [1] on page 117.

## **Properties**

Besides drawing properties described in the section Drawing properties, this test deck has one additional property:

- Create Vote For subdeck: Flag which indicates whether Vote For subdeck (the last test deck in the list above) should be generated.

### **4.2.1.2 NYS General Standard Test Deck**

NYS General Standard Test deck contains only one test deck: this voting pattern implements as many as possible scenario's as possible on an as limited as possible test set. The first ballot is always blank, the second ballot has undervote, write-ins, cross-endorsements and regular votes and the third ballot has overvote in a single contest and regular votes in all others.

## **Properties**

Besides drawing properties described in the section Drawing properties , this test deck does not have additional configuration properties.

### **4.2.1.3 NYS Primary Comprehensive Test Deck**

NYS Primary Comprehensive Test deck contains the following subdecks:

- NYS Primary Comprehensive subdeck #1 – OS EV: this voting pattern implements the Election Verification subdeck for NYS general elections as described in on page 198.
- NYS Primary Comprehensive subdeck #2 – OS Pattern: this voting pattern implements the Pattern subdeck for NYS general elections as described in [1] on page 217.
- NYS Primary Comprehensive subdeck #3 – OS OV: this voting pattern implements the overvote subdeck for NYS general elections as described in [1] on page 245.
- NYS Primary Comprehensive subdeck #4 – OS UV: this voting pattern implements the undervote subdeck for NYS general elections as described in [1] on page 255.
- NYS Primary Comprehensive subdeck #5 – OS Random: this voting pattern implements the random subdeck for NYS general elections as describe in [1] on page 261, 263.

## Properties

Besides drawing properties described in the section Drawing properties, this test deck has one additional property:

- Create Vote For subdeck: Flag which indicates whether Vote For subdeck (the last test deck in the list above) should be generated.

### 4.2.1.4 NYS Primary Standard Test Deck

NYS General Standard Test deck contains only one test deck: this voting pattern implements as many as possible scenario's as possible on an as limited as possible test set. The first ballot is always blank, the second ballot has undervote, write-ins and regular votes and the third ballot has overvote in a single contest and regular votes in all others.

## Properties

Besides drawing properties described in the section Drawing properties, this test deck does not have additional configuration properties.

### 4.2.2 Puerto Rico Test Deck

Puerto Rico Test Deck contains the following subdecks:

- Integro: One vote for each Straight Party candidate. Applies only to those ballots that have straight party.
- Mixto: Votes for Party #1 in Straight Party contest. Makes explicit votes for 1st candidate of Party #2 in each regular contest.
- Candidatura: Leaves Straight Party contest blank. Makes explicit marks for all candidates in each column, one column at a time.
- Blank: Blank ballot.
- Protestada: Overvotes the Straight Party contest. Leaves all other contests blank.
- Overvote: Overvotes all contests except the Straight Party contest. Leaves Straight Party contest blank.

## Properties

Besides drawing properties described in the section Drawing properties , this test deck does not have additional configuration properties.

### 4.2.3 Michigan Test Deck

Test procedures are described in TEST\_DECK\_MANUAL05\_131814\_7.pdf document. Michigan test deck produces ballots to meet all requirements:

Michigan has test procedures for 4 types of elections:

1. Open Primary election without party preference contest
2. General election with straight party contest
3. Non - partisan election with proposals
4. Proposal election
  - For each election type there is a list of required ballots. See tables below.

<b>Required ballots for open primary election</b>	
1	For each party vote all positions – Overvote every office
2	Using 1 ballot, vote all positions that are not used on the ballot for candidates - testing possible inactive voting positions (stray marks )
3	Blank ballot
4	For each party: a) Vote 1 ballot correctly in the partisan section and overvote the non-partisan and proposal sections of the ballot b) Vote 1 ballot correctly in the non- partisan section and overvote the partisan and proposal sections c) Vote 1 ballot correctly in the proposal section and overvote the partisan and non- partisan sections
5	Using 1 ballot, vote the following: DO NOT OVERVOTE; VOTE A SPLIT TICKET. Vote the non- partisan and proposal sections of the ballot.
6	Vote correctly one or more ballots from a different precinct. These ballots will be rejected and cannot be overridden. (wrong ballot id)
7	Vote additional ballots as necessary so that a different total number of valid votes are cast for each candidate within an office, and for and against each proposal.  ALL Voting positions are to be tested - None of the candidates, write-in positions, nor proposals shall have an accumulated vote total of zero.  It is not required that each write-in position show a different total number of votes.

Table 4-1: Required ballots for open primary election

<b>Required ballots for general election</b>	
1	Using 1 ballot, vote an all positions ballot - Overvote every office
2	Using 1 ballot, vote all positions that are not used on the ballot for candidates - testing possible inactive voting positions (stray marks )
3	Blank ballot
4	Using 1 ballot, vote a straight party ticket. Do not cast any other partisan votes on this ballot.
5	Using 1 ballot, vote 2 or more straight party tickets. Do not cast any other partisan votes on this ballot.
6	<p>Using 1 ballot, and a different office for each instruction, vote the following:</p> <p>Vote a straight party ticket</p> <p>In a "vote for 1" partisan office, vote for 1 candidate of the same party used in (a)</p> <p>In a "vote for 1" partisan office, vote for 1 candidate of a different party than used in (a)</p> <p>In a "vote for 2" partisan office, vote for 2 candidates, from two different parties than used in (a)</p> <p>Do not vote in a partisan office where a candidate appears under the party selected in (a)</p> <p>Vote for 1 write?in candidate in either a partisan or non?partisan office (if applicable)</p> <p>Vote non?partisan offices and proposals</p>
7	<p>Vote the following: <b>DO NOT VOTE THE STRAIGHT PARTY SECTION</b></p> <p>Vote 1 ballot correctly in the partisan section and overvote the non?partisan and proposal sections of the ballot</p> <p>Vote 1 ballot correctly in the non?partisan section and overvote the partisan and proposal sections</p> <p>Vote 1 ballot correctly in the proposal section and overvote the partisan and non?partisan sections</p> <p>Required ballots for general election</p>

Table 4-2: Required ballots for general election

<b>Required ballots for general election</b>	
8	<p>Using 1 ballot, vote two or more straight party tickets. Using a different office for each instruction, vote the following:</p> <ul style="list-style-type: none"> <li>(a) In a "vote for 1" office, cast a vote for the candidates listed under the first and second party selected above</li> <li>(b) Repeat step (a)</li> <li>(c) In two "vote for 1" offices, cast a vote for the candidates listed under the first party selected</li> <li>(d) In a "vote for 1" office, cast a vote for the candidate listed under the second party selected above</li> </ul> <p>Additional ballots may be required to complete (c) and (d)</p>
9	<p>Using 1 ballot and a different office for each instruction, vote the following:</p> <ul style="list-style-type: none"> <li>a. Vote a straight party ticket for a party where in a "vote for 2" partisan office there are 2 candidates from that party running</li> <li>b. In the first "vote for 2" office, where there are 2 candidates from the party used in (a) running, cast two votes for candidates of a different party than used in (a)</li> <li>c. In a second "vote for 2" office, where there are 2 candidates from the party used in (a) running, cast two votes for candidates of two different parties than used in (a)</li> </ul> <p>Additional ballots may be required to complete this test.</p> <p>If the ballot contains a "vote for 3" office and there are 3 candidates from that party running, an additional test ballot must be included following this same instruction.</p>
10	<p>Using 1 ballot and a different office for each instruction, vote the following:</p> <ul style="list-style-type: none"> <li>a) Vote a straight party ticket for a party where in a "vote for 2" partisan office there are 2 candidates from that party running</li> <li>b) In the first "vote for 2" office, where there are 2 candidates from the party used in (a) running, vote for candidate of a different party than used in (a)</li> <li>c) In a second "vote for 2" office, where there are 2 candidates from the party used in (a) running, vote for candidate of the party used in (a) and vote for a candidate of a different party</li> <li>d) In a third "vote for 2" office, where there are 2 candidates from the same party used in (a) running, vote for a candidate of the same party used in (a)</li> </ul> <p>Additional ballots may be required to complete this test.</p>

Table 4-2: Required ballots for general election

<b>Required ballots for general election</b>	
11	<p>Using 1 ballot, vote the following:</p> <p>a) Vote a straight party ticket where in a "vote for 2" partisan office there is only 1 candidate from that same party running</p> <p>b) In that partisan "vote for 2" office, where there is only 1 candidate from the party used in (a) running, vote for a candidate of a different party than used in (a)</p>
12	FOR EACH PARTY, vote a straight party ticket and vote individually for candidates of the same party.
13	Vote correctly one or more ballots from a different precinct. These ballots will be rejected and cannot be overridden (wrong precinct ballot).
14	<p>Vote additional ballots as necessary so that that each party receives not less than 2 straight party votes and a different total number of valid votes are cast for each party in the straight party section, each candidate within an office, and for and against each proposal.</p> <p>It is not required that each write-in position show a different total number of votes.</p>

Table 4-2: Required ballots for general election

<b>Required ballots for non-partisan election with proposals</b>	
1	Using 1 ballot, vote an all positions ballot - Overvote every office
2	Using 1 ballot, vote all positions that are not used on the ballot for candidates - testing possible inactive voting positions (stray marks)
3	Blank ballot
4	<p>a) Vote 1 ballot correctly in the non-partisan section and overvote the proposal section.</p> <p>b) Vote 1 ballot correctly in the proposal section and overvote non-partisan section.</p>

Table 4-3: Required ballots for non-partisan election with proposals

<b>Required ballots for non-partisan election with proposals</b>	
5	Vote correctly one or more ballots from a different precinct. These ballots will be rejected and cannot be overridden (wrong ballot id).
6	Vote additional ballots as necessary so that a different total number of valid votes are cast for each candidate within an office, and for and against each proposal.  ALL Voting positions are to be tested - None of the candidates, write-in positions, nor proposals shall have an accumulated vote total of zero.  It is not required that each write-in position show a different total number of votes.

Table 4-3: Required ballots for non-partisan election with proposals

<b>Required ballots for proposal election</b>	
1	Using 1 ballot, vote an all positions ballot - Overvote every office
2	Using 1 ballot, vote all positions that are not used on the ballot for candidates - testing possible inactive voting positions (stray marks)
3	Blank ballot
4	Vote 1 ballot correctly in the proposal section. Required ballots for proposal election
5	Vote correctly one or more ballots from a different precinct. These ballots will be rejected and cannot be overridden (wrong ballot id).
6	Vote additional ballots as necessary so that a different total number of valid votes are cast for and against each proposal.  ALL Voting positions are to be tested - None of proposals shall have an accumulated vote total of zero.

Table 4-4: Required ballots for proposal election

- Besides default outputs, Michigan test deck generates ballot chart of predetermined results. Ballot chart shows how each ballot in a deck is marked. This documentation indicates each valid or invalid vote:
  - “1” presents valid explicit votes
  - “1” presents valid implicit votes
  - “0” presents invalid votes

## Properties

Besides drawing properties described in the section Drawing properties, this test deck has two additional properties:

- Ballot chart format: Ballot chart report can be exported to pdf or excel document. (Default value is PDF)
- Unique number of votes for Write-ins: (Default value is False)

**NOTE:** For Michigan it is not required that each write-in position has different number of votes.

## 4.3 Drawing properties

This section describes test deck drawing properties. Drawing properties are divided in the following categories:

- Ballot Label
- Copyright Label
- Cross-endorsement
- Duplex Printing

### 4.3.1 Ballot Label

Contains properties related to position and size of ballot label. Text will be generated by test deck and will contain ballot marking description.

- Rotated: Flag indicating whether test label should be rotated 90 degrees counter clockwise.
- Text Size: Ballot label font size.
- X: X position of the ballot label in points (1/72 of an inch) (axis goes left to right).
- Y: Y position of the ballot label in points (1/72 of an inch) (axis goes bottom to top).

### 4.3.2 Copyright Label

Contains properties related to position and text of copyright label.

- Rotated: Flag indicating whether copyright label should be rotated 90 degrees counter clockwise.
- Text Size: Copyright label font size.
- X: X position of the copyright label in points (1/72 of an inch) (axis goes left to right).



- Y: Y position of the copyright label in points (1/72 of an inch) (axis goes bottom to top).

### 4.3.3 Cross-endorsement

Contains properties related to position of cross-endorsement label.

- X: Relative X position in relation to the voting box where cross-endorsement label will be placed.
- Y: Relative Y position in relation to the voting box where cross-endorsement label will be placed.

### 4.3.4 Duplex Printing

- Force Duplex: Flag indicating whether to add blank back page to any single sided ballot in order to support duplex printing.

### 4.3.5 Test Label

Contains properties related to position and text of test label.

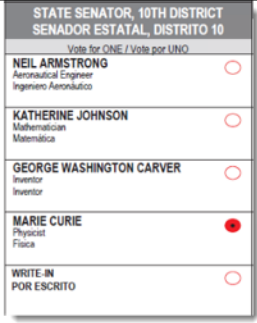
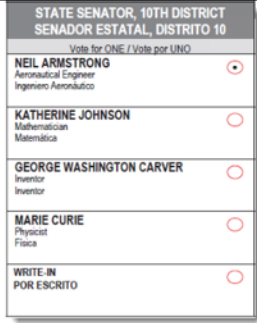
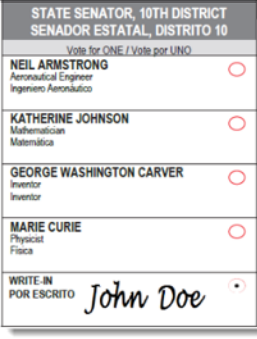

- Rotated: Flag indicating whether test label should be rotated 90 degrees counter clockwise.
- Text: Test text to display on the ballot.
- Text Size: Test label font size.
- X: Relative X position in relation to the barcode where test label will be placed.
- Y: Relative Y position in relation to the barcode where test label will be placed.

### 4.3.6 Voting Box

Contains properties related to marking voting box.

- **Background Is Red:** Flag indicating should the voting box be erased with red color (or white).
- **Use Background:** Flag indicating should the voting box be erased at all.
- **Background Radius Factor:** Controls the size of the erasing background.

The above three settings will impact the appearance of ballots marked with marginal marks and must be carefully considered when creating a test deck for marginal marks depending on project settings (red or black ovals) and scanner configurations (whether the scanners are using red drop-out or not).

<p><b>Example 1</b></p> <ul style="list-style-type: none"> <li>Background is Red is set to <b>True</b></li> <li>Use Background is set to <b>True</b></li> </ul> <p>The target area, except the marginal mark, will be filled with red.</p>	<p><b>Example 2</b></p> <ul style="list-style-type: none"> <li>Background is Red is set to <b>True</b></li> <li>Use Background is set to <b>False</b></li> </ul> <p>The target area, except of the marginal mark, will be filled with white.</p>
	
<p><b>Example 3</b></p> <ul style="list-style-type: none"> <li>Background is Red is set to <b>False</b></li> <li>Use Background is set to <b>True</b></li> </ul> <p>The target area, except of the marginal mark, will be filled with white. The deck will also attempt to 'erase' the background (including the oval). The radius of this erasure can be defined in the <b>Background Radius Factor</b> setting.</p>	<p><b>Example 4</b></p> <ul style="list-style-type: none"> <li>Background is Red is set to <b>False</b></li> <li>Use Background is set to <b>False</b></li> </ul> <p>The target area, except of the marginal mark, will be filled with white.</p>
	
<p><b>Considerations:</b></p> <ul style="list-style-type: none"> <li>For Example 1, the scanners must be configured to use red-dropout or this mark will be a complete mark instead of a marginal mark.</li> <li>Counties using black ovals on their ballots should use the settings described in Examples 2 and 4 so that the oval is considered during image analysis, in addition to the marked within the target area.</li> </ul>	

- **Marking Style:** Marking style used when filling voting boxes. This sets the size of the marks. Do not use NY unless it is for NY ballots.
- **Write-in Has Voting Box:** Flag indicating whether to use voting boxes are used in the write-in areas.

Default drawing properties are shown in the figure below.

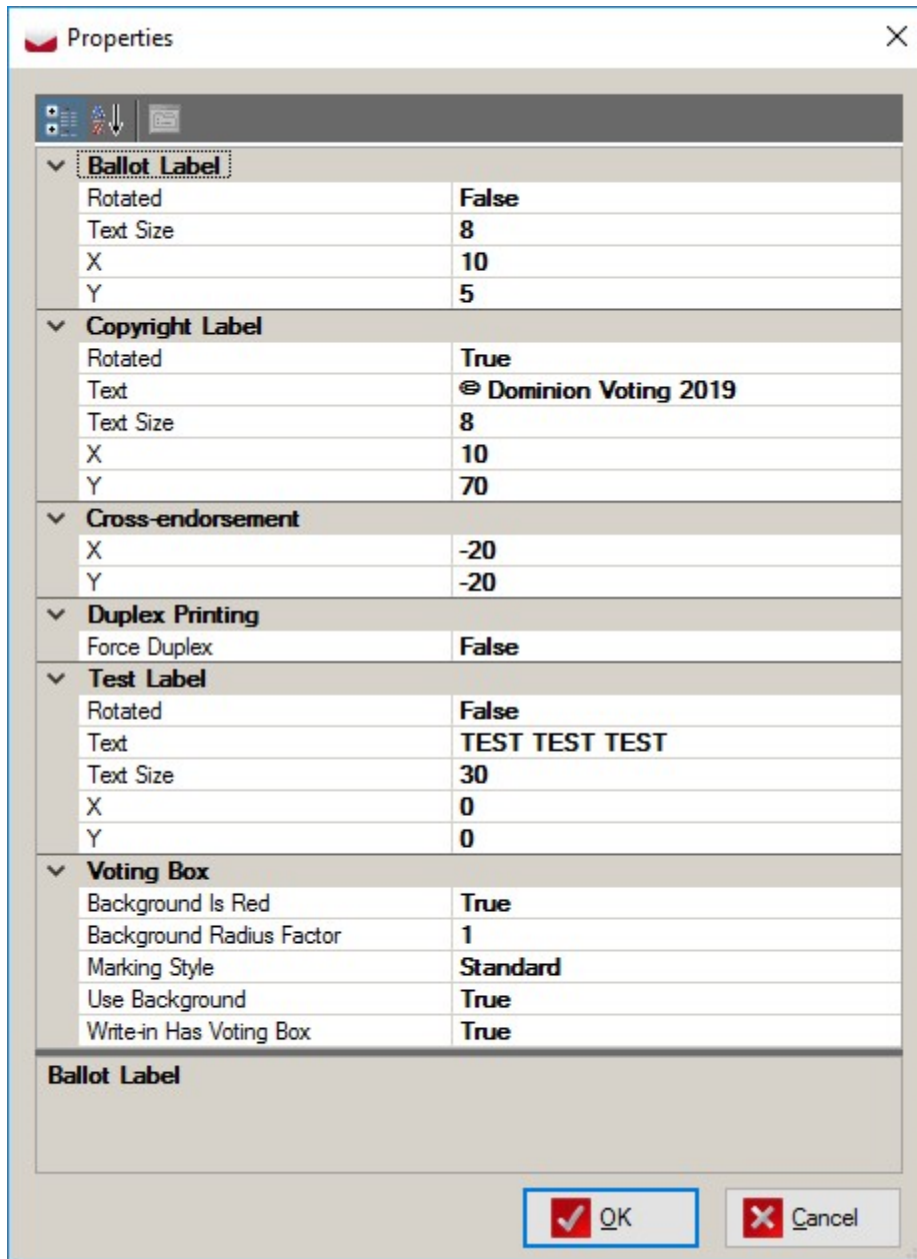


Figure 4-30: Drawing Properties

**NOTE:** If you are modifying labels settings, make sure they don't cover some active areas of the ballot. Do a visual inspection before sending ballots to print.

**ImageCast Printer Test**  
**4.14.A1**  
 This artwork may not be used without the written permission of Dominion Voting Systems.  
 © 2015 Dominion Voting Systems  
 Ballot ID: 1  
 Ballot 1 - Type 1 - English - All - Precinct 01 - 11 Single

FEDERAL	STATE	LOCAL
President and Vice President [Major] Vote for 1	Governor and Lt. Governor Vote for 1	Mayor Vote for 1
President and Vice President Choice 1 <small>DEMOCRATIC</small>	Governor and Lt. Governor Choice 1 <small>DEMOCRATIC</small>	Mayor Choice 1 <small>DEMOCRATIC</small>
President and Vice President Choice 2 <small>REPUBLICAN</small>	Governor and Lt. Governor Choice 2 <small>REPUBLICAN</small>	Mayor Choice 2 <small>REPUBLICAN</small>
President and Vice President Choice 3 <small>GREEN</small>	Governor and Lt. Governor Choice 3 <small>GREEN</small>	Mayor Choice 3 <small>GREEN</small>
President and Vice President Choice 4 <small>LIBERTARIAN</small>	Governor and Lt. Governor Choice 4 <small>LIBERTARIAN</small>	Mayor Choice 4 <small>LIBERTARIAN</small>
President and Vice President Choice 5 <small>INDEPENDENT</small>	Governor and Lt. Governor Choice 5 <small>INDEPENDENT</small>	Mayor Choice 5 <small>INDEPENDENT</small>
President and Vice President Choice 6 <small>WARRANT TIME</small>	Governor and Lt. Governor Choice 6 <small>WARRANT TIME</small>	Mayor Choice 6 <small>WARRANT TIME</small>
President and Vice President Choice 7 <small>WARRANT TIME</small>	Governor and Lt. Governor Choice 7 <small>WARRANT TIME</small>	Mayor Choice 7 <small>WARRANT TIME</small>
President and Vice President Choice 8 <small>WARRANT TIME</small>	Governor and Lt. Governor Choice 8 <small>WARRANT TIME</small>	Mayor Choice 8 <small>WARRANT TIME</small>
President and Vice President Choice 9 <small>WARRANT TIME</small>	Governor and Lt. Governor Choice 9 <small>WARRANT TIME</small>	Mayor Choice 9 <small>WARRANT TIME</small>
President and Vice President No Candidate	Governor and Lt. Governor No Candidate	Mayor No Candidate
Write in	Write in	Write in

TEST TEST TEST TEST

Printer Test - Simple deck - style 1 - - 1/11 - March 23, 2016 1 / 1

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1 / 1

Voting box (red background oval)

Copyright label

Test label

Ballot label

Figure 4-31: Drawing elements

## CHAPTER 5: REPORTING

In addition to marked ballots files (PDF or XML) following reports will also be generated:

Reports on a tabulator level:

- Report that shows marked ballots in deck for a tabulator.
- Reports with expected results - summary and detailed. Summary displays total results, while detailed displays results broken down per ballot card.

Reports on a project level:

- Reports with expected results - summary and detailed. Summary displays total results broken down per counting group, while detailed displays results broken down per tabulator.
- Report that shows associations between tabulators and ballots.

### 5.1 Deck Properties

This report outputs a list of all the properties that were used to generate the deck. This report will include:

- Deck Creation Date
- Number of Decks generated
- Number of PDFs created
- Deck configuration properties (e.g. exclude rotation, consolidate, merging of subdecks and results, as well as all values set in the Properties window).
- Deck Filters
  - Tabulators
  - Ballot Groups
  - Languages

	C	D	F	G	I	J	M	O	P	Q	R	S	T	U
1	Test deck creation properties													
2	Deck creation date: Monday, August 17, 2020													
3	Number of decks: 1													
4	Number of PDFs: 50													
5														
6														
7														
8	<b>Deck configuration properties:</b>													
9														
10														
11	Exclude rotation	False												
12	Consolidation	None												
13	Subdecks - Merge ballot card pdf documents	False												
14	Subdecks - Merge ballot card results	False												
15	Subdecks - Merge ballot card results	False												
16	Subdecks - Merge ballot card results	False												
17	Subdecks - Merge ballot card results	False												
18	Generate outputs per tabulator groups	True												
19	Generate outputs per tabulator groups	True												
20	Generate ballot images	False												
21	Ballot Label - Rotated	False												
22	Ballot Label - Text Size	6												
23	Ballot Label - X	10												
24	Ballot Label - Y	5												
25	Copyright Label - Rotated	True												
26	Copyright Label - Text	© Dominion Voting 2020												
27	Copyright Label - Text Size	6												
28	Copyright Label - X	10												
29	Copyright Label - Y	10												
30	Cross-endorsement - X	20												
31	Cross-endorsement - Y	20												
32	Duplex Printing - Force Duplex	False												
33	Technical options - Max CPU threads	default												
34	Test Label - Rotated	False												
35	Test Label - Text	TEST TEST TEST												

Deck filters:		
Tabulator filter	Ballot group filter	Language filter
ALL	ALL	English / Spanish
		English / Chinese
		English / Tagalog

Figure 5-1: Test Deck creation Properties

## 5.2 Actas report

This summary report is produced in two formats:

- Text file - .txt
- Excel file - .xlsx



 actas_Vote by Mail.txt	8/17/2020 12:53 AM	Text Document	104 KB
 actas_Vote by Mail.xlsx	8/17/2020 12:53 AM	XLSX File	78 KB

Figure 5-2: Actas report

## 5.3 Ballot, Precinct, Tabulator report

This report lists each ballot ID, the filename associated with that ballot ID, as well as all of the tabulators that are configured to accept that ballot ID (regardless of the tabulators selected during test deck creation).

Ballot Key-in Id	Ballot File Name	Precinct	Tabulator
1	BT 1 - English _ Spanish - 10101	10101	ICC - Election Day
1	BT 1 - English _ Spanish - 10101	10101	ICC - Vote by Mail
1	BT 1 - English _ Spanish - 10101	10101	ICE Election Day 1
1	BT 1 - English _ Spanish - 10101	10101	ICX
2	BT 1 - English _ Chinese - 10101	10101	ICC - Election Day
2	BT 1 - English _ Chinese - 10101	10101	ICC - Vote by Mail
2	BT 1 - English _ Chinese - 10101	10101	ICE Election Day 1
2	BT 1 - English _ Chinese - 10101	10101	ICX
3	BT 1 - English _ Tagalog - 10101	10101	ICC - Election Day
3	BT 1 - English _ Tagalog - 10101	10101	ICC - Vote by Mail
3	BT 1 - English _ Tagalog - 10101	10101	ICE Election Day 1
3	BT 1 - English _ Tagalog - 10101	10101	ICX
4	BT 1 - English _ Vietnamese - 10101	10101	ICC - Election Day
4	BT 1 - English _ Vietnamese - 10101	10101	ICC - Vote by Mail
4	BT 1 - English _ Vietnamese - 10101	10101	ICE Election Day 1
4	BT 1 - English _ Vietnamese - 10101	10101	ICX
5	BT 1 - English _ Spanish - 10102	10102	ICC - Election Day
5	BT 1 - English _ Spanish - 10102	10102	ICC - Vote by Mail
5	BT 1 - English _ Spanish - 10102	10102	ICE Election Day 2
5	BT 1 - English _ Spanish - 10102	10102	ICX
6	BT 1 - English _ Chinese - 10102	10102	ICC - Election Day
6	BT 1 - English _ Chinese - 10102	10102	ICC - Vote by Mail
6	BT 1 - English _ Chinese - 10102	10102	ICE Election Day 2
6	BT 1 - English _ Chinese - 10102	10102	ICX
7	BT 1 - English _ Tagalog - 10102	10102	ICC - Election Day
7	BT 1 - English _ Tagalog - 10102	10102	ICC - Vote by Mail
7	BT 1 - English _ Tagalog - 10102	10102	ICE Election Day 2
7	BT 1 - English _ Tagalog - 10102	10102	ICX
8	BT 1 - English _ Vietnamese - 10102	10102	ICC - Election Day
8	BT 1 - English _ Vietnamese - 10102	10102	ICC - Vote by Mail

Figure 5-3: Ballot precinct tabulator report


## 5.4 Summary Results

The name of the summary results file will vary based on the marking pattern selected then the deck was generated.

- SPL\_Results - summary results of the special/exception deck
- STD\_Results - summary results of the standard deck
- COMPL\_Results - combined summary results of the special/exception and standard decks.
- FP\_Results - summary results of the first position deck
- SIM\_Results - summary results of the simple test deck
- ACC\_Results - summary results of the all combinations test deck

An example of the results report can be seen below:

Page 1 of 3



All choice combinations TestDeck  
2020 510 A Famous Names Demo  
Summary Results

Voters Count: 1080  
Cards Count: 1080

STATE SENATOR, 10TH DISTRICT		
Candidate	Party	Total
NEIL ARMSTRONG		30
KATHERINE JOHNSON		30
GEORGE WASHINGTON CARVER		30
MARIE CURIE		30
Write-in		30
Undervotes		930
Overvotes		0

UNITED STATES REPRESENTATIVE, 13TH DISTRICT		
Candidate	Party	Total
THURGOOD MARSHALL		30
HELEN KELLER		30
HARVEY MILK		30
MAYA ANGELOU		30
Write-in		30
Undervotes		930
Overvotes		0

BOARD OF EDUCATION		
Candidate	Party	Total
JOHN DEWEY		30
ANNE SULLIVAN		30
MARTIN LUTHER KING JR.		30
CARL SAGAN		30
SANDRA DAY O'CONNOR		30
Write-in		30

Figure 5-4: The Summary Results report

### 5.4.1 Summary Results Text File

The Summary Report text file contains information regarding each of the files included in the test deck (PDF Name, Ballot ID, Deck Type, Deck Name, Total ballots in each deck and languages) in addition to the Summary Results for each Contest and Candidate in the election.



Ballot File Name	BT 1 - English_Spanish - 1	BT 1 - English_Chinese	BT 1 - Engl	BT 1 - Engl	BT 1 - Engl	BT 1 - Engl	BT 1 - Engl	BT 1 - Engl	BT 1 - Engl
Ballot Key-in Id	1	2	3	5	6	7	9	10	
Ballot External Id	1	2	3	5	6	7	9	10	
Subdeck type	ACC	ACC	ACC	ACC	ACC	ACC	ACC	ACC	ACC
Subdeck name	All choice combinations	All choice combinations	All choice	All choice	All choice	All choice	All choice	All choice	All choice
Ballot Count	36	36	36	36	36	36	36	36	36
Ballot content language	English / Spanish	English / Chinese	English /	English /	English /	English /	English /	English /	English /
Contest Id	Contest	Candidate	Party						
1	STATE SENATOR, 10TH DISTRICT	4 MARIE CURIE		1	1	1	1	1	1
1	STATE SENATOR, 10TH DISTRICT	3 GEORGE WASHINGTON CARVER		1	1	1	1	1	1
1	STATE SENATOR, 10TH DISTRICT	34 Write-in		1	1	1	1	1	1
1	STATE SENATOR, 10TH DISTRICT	UV Undervotes		31	31	31	31	31	31
1	STATE SENATOR, 10TH DISTRICT	1 NEIL ARMSTRONG		1	1	1	1	1	1
1	STATE SENATOR, 10TH DISTRICT	OV Overvotes		0	0	0	0	0	0
1	STATE SENATOR, 10TH DISTRICT	2 KATHERINE JOHNSON		1	1	1	1	1	1
2	UNITED STATES REPRESENTATIVE, 13TH DISTRICT	OV Overvotes		0	0	0	0	0	0
2	UNITED STATES REPRESENTATIVE, 13TH DISTRICT	8 MAYA ANGELOU		1	1	1	1	1	1
2	UNITED STATES REPRESENTATIVE, 13TH DISTRICT	7 HARVEY MILK		1	1	1	1	1	1
2	UNITED STATES REPRESENTATIVE, 13TH DISTRICT	5 THURGOOD MARSHALL		1	1	1	1	1	1
2	UNITED STATES REPRESENTATIVE, 13TH DISTRICT	33 Write-in		1	1	1	1	1	1
2	UNITED STATES REPRESENTATIVE, 13TH DISTRICT	6 HELEN KELLER		1	1	1	1	1	1
2	UNITED STATES REPRESENTATIVE, 13TH DISTRICT	UV Undervotes		31	31	31	31	31	31
3	BOARD OF EDUCATION	12 CARL SAGAN		1	1	1	1	1	1
3	BOARD OF EDUCATION	10 ANNE SULLIVAN		1	1	1	1	1	1
3	BOARD OF EDUCATION	30 Write-in		1	1	1	1	1	1
3	BOARD OF EDUCATION	9 JOHN DEWEY		1	1	1	1	1	1
3	BOARD OF EDUCATION	UV Undervotes		30	30	30	30	30	30
3	BOARD OF EDUCATION	13 SANDRA DAY O'CONNOR		1	1	1	1	1	1
3	BOARD OF EDUCATION	11 MARTIN LUTHER KING JR.		1	1	1	1	1	1
3	BOARD OF EDUCATION	OV Overvotes		0	0	0	0	0	0

Figure 5-5: Summary Results text file

## 5.5 Tabulator Groups

The Tabulator Groups text file contains information regarding each of the tabulators, its group and tabulator number.

## 5.6 Tabulator Ballots Report

The Tabulator Ballots Report text file contains each tabulator along with its:

- Number
- Name
- Counting group,
- Applicable precinct portion
- Ballot Group
- Ballot Type
- Activation Codes
- Languages
- Ballot Card File Names
- Ballot Card Descriptions
- Ballot Card Key in ID

Tabulator Number	Tabulator Name	Counting Group	Precinct Portion	Ballot Group	Ballot Type	Activation Code	Language	Ballot Card File Name	Ballot Card Description	Ballot Card Key In Id
0	ICE Election Day 1	Election Day	10101	Default	BT 1	0001	English / Spanish	BT 1 - English_Spanish - 10101	BT 1 - English / Spanish - 10101	1
1	ICE Election Day 1	Election Day	10101	Default	BT 1	0001	English / Chinese	BT 1 - English_Chinese - 10101	BT 1 - English / Chinese - 10101	2
2	ICE Election Day 1	Election Day	10101	Default	BT 1	0001	English / Tagalog	BT 1 - English_Tagalog - 10101	BT 1 - English / Tagalog - 10101	3
3	ICE Election Day 1	Election Day	10101	Default	BT 1	0001	English / Vietnamese	BT 1 - English_Vietnamese - 10101	BT 1 - English / Vietnamese - 10101	4
4	ICE Election Day 2	Election Day	10102	Default	BT 1	0002	English / Spanish	BT 1 - English_Spanish - 10102	BT 1 - English / Spanish - 10102	5
5	ICE Election Day 2	Election Day	10102	Default	BT 1	0002	English / Chinese	BT 1 - English_Chinese - 10102	BT 1 - English / Chinese - 10102	6
6	ICE Election Day 2	Election Day	10102	Default	BT 1	0002	English / Tagalog	BT 1 - English_Tagalog - 10102	BT 1 - English / Tagalog - 10102	7
7	ICE Election Day 2	Election Day	10102	Default	BT 1	0002	English / Vietnamese	BT 1 - English_Vietnamese - 10102	BT 1 - English / Vietnamese - 10102	8
8	ICE Election Day 3	Election Day	10103	Default	BT 1	0003	English / Spanish	BT 1 - English_Spanish - 10103	BT 1 - English / Spanish - 10103	9
9	ICE Election Day 3	Election Day	10103	Default	BT 1	0003	English / Chinese	BT 1 - English_Chinese - 10103	BT 1 - English / Chinese - 10103	10
10	ICE Election Day 3	Election Day	10103	Default	BT 1	0003	English / Tagalog	BT 1 - English_Tagalog - 10103	BT 1 - English / Tagalog - 10103	11
11	ICE Election Day 3	Election Day	10103	Default	BT 1	0003	English / Vietnamese	BT 1 - English_Vietnamese - 10103	BT 1 - English / Vietnamese - 10103	12
12	ICE Election Day 4	Election Day	10104	Default	BT 1	0004	English / Spanish	BT 1 - English_Spanish - 10104	BT 1 - English / Spanish - 10104	13
13	ICE Election Day 4	Election Day	10104	Default	BT 1	0004	English / Chinese	BT 1 - English_Chinese - 10104	BT 1 - English / Chinese - 10104	14
14	ICE Election Day 4	Election Day	10104	Default	BT 1	0004	English / Tagalog	BT 1 - English_Tagalog - 10104	BT 1 - English / Tagalog - 10104	15
15	ICE Election Day 4	Election Day	10104	Default	BT 1	0004	English / Vietnamese	BT 1 - English_Vietnamese - 10104	BT 1 - English / Vietnamese - 10104	16
16	ICE Election Day 5	Election Day	10105	Default	BT 1	0005	English / Spanish	BT 1 - English_Spanish - 10105	BT 1 - English / Spanish - 10105	17
17	ICE Election Day 5	Election Day	10105	Default	BT 1	0005	English / Chinese	BT 1 - English_Chinese - 10105	BT 1 - English / Chinese - 10105	18
18	ICE Election Day 5	Election Day	10105	Default	BT 1	0005	English / Tagalog	BT 1 - English_Tagalog - 10105	BT 1 - English / Tagalog - 10105	19
19	ICE Election Day 5	Election Day	10105	Default	BT 1	0005	English / Vietnamese	BT 1 - English_Vietnamese - 10105	BT 1 - English / Vietnamese - 10105	20
20	ICE Election Day 6	Election Day	10106	Default	BT 2	0006	English / Spanish	BT 2 - English_Spanish - 10106	BT 2 - English / Spanish - 10106	21
21	ICE Election Day 6	Election Day	10106	Default	BT 2	0006	English / Chinese	BT 2 - English_Chinese - 10106	BT 2 - English / Chinese - 10106	22
22	ICE Election Day 6	Election Day	10106	Default	BT 2	0006	English / Tagalog	BT 2 - English_Tagalog - 10106	BT 2 - English / Tagalog - 10106	23
23	ICE Election Day 6	Election Day	10106	Default	BT 2	0006	English / Vietnamese	BT 2 - English_Vietnamese - 10106	BT 2 - English / Vietnamese - 10106	24
24	ICE Election Day 7	Election Day	10107	Default	BT 2	0007	English / Spanish	BT 2 - English_Spanish - 10107	BT 2 - English / Spanish - 10107	25
25	ICE Election Day 7	Election Day	10107	Default	BT 2	0007	English / Chinese	BT 2 - English_Chinese - 10107	BT 2 - English / Chinese - 10107	26
26	ICE Election Day 7	Election Day	10107	Default	BT 2	0007	English / Tagalog	BT 2 - English_Tagalog - 10107	BT 2 - English / Tagalog - 10107	27
27	ICE Election Day 7	Election Day	10107	Default	BT 2	0007	English / Vietnamese	BT 2 - English_Vietnamese - 10107	BT 2 - English / Vietnamese - 10107	28
28	ICE Election Day 8	Election Day	10108	Default	BT 2	0008	English / Spanish	BT 2 - English_Spanish - 10108	BT 2 - English / Spanish - 10108	29

Figure 5-6: Tabulator Ballots Report text file


## 5.7 Tabulators sub-folder and its reports

A Tabulators sub-folder is created for each selected tabulator. These expected results on a tabulator level are useful to compare tabulator-level results tapes to expected results report from the tabulator level.

This folder contains:

- Summary Results for that tabulator (in PDF and Excel)

Page 1 of 3



All choice combinations TestDeck  
2020 510 A Famous Names Demo  
ICE Election Day 1

Voters Count: 108  
Cards Count: 108

STATE SENATOR, 10TH DISTRICT		
Candidate	Party	Total
NEIL ARMSTRONG		3
KATHERINE JOHNSON		3
GEORGE WASHINGTON CARVER		3
MARIE CURIE		3
Write-in		3
Undervotes		93
Overvotes		0

UNITED STATES REPRESENTATIVE, 13TH DISTRICT		
Candidate	Party	Total
THURGOOD MARSHALL		3
HELEN KELLER		3
HARVEY MILK		3
MAYA ANGELOU		3
Write-in		3
Undervotes		93
Overvotes		0

Figure 5-7: Summary report for tabulators

- Ballots Report – a report of the ballots included in the deck (and expected results calculation).

Ballots in test deck :

Ballot Card File Name	Ballot Card Description
BT 1 - English _ Spanish - 10101	BT 1 - English / Spanish - 10101
BT 1 - English _ Chinese - 10101	BT 1 - English / Chinese - 10101
BT 1 - English _ Tagalog - 10101	BT 1 - English / Tagalog - 10101

Figure 5-8: Ballots in test deck

## CHAPTER 6: REFERENCES

- Test Deck Reference Document 08\_13\_09.pdf
- TEST\_DECK\_MANUAL05\_131814\_7.pdf

## APPENDIX A: DEFINITIONS

### A.1 Ballot ID level decks created by the ATD program:

Complete Deck – a ballot ID level deck that has an incremental pattern

L&A ‘n’ Deck – a type of Complete Deck that resets after ‘n’, i.e. L&A 3 is 1-2-3-1-2-3...

Simple Deck – a ballot ID level deck where every candidate gets one vote, including write ins. L&A 1 is equivalent to the Simple Deck. L&A 1 with write-ins deselected is the only way to get one vote for each regular candidate. Special Deck – a ballot ID level deck containing exceptions: overvotes, blanks, intentional errors, marginal marks.

First Position Deck – 1 ballot per ID with the first candidate in each contest marked (not currently available in application)

### A.2 Pre-LAT Decks Compiled by Testers from Individual Decks

Compiled Simple Deck – All Complete Decks for the first precinct in each style with increment pattern up to 3, plus a L&A 1 for all the other precincts/ballot IDs in that style. (i.e. first precinct “L&A 3”, and other precincts a deck with only one vote per candidate).

Compiled First Position Deck – All Complete Decks for the first precinct in each style with increment pattern up to 3, plus a First Position Deck for all the other precincts/ballot IDs in that style. (i.e. first precinct “L&A 3”, and other precincts the “First Position Deck”).

Adjudication Deck – manually created deck per style. Use extra blank ballots:

1. Select 5 candidates on each over voted ballot that should be adjudicated with an actual vote. The candidates should be in any position except 1. Circle the candidates chosen with a black Sharpie and adjudicate correctly.
2. Scan all blank ballots and adjudicate.
3. Write-ins: Get a set of blank ballots, quantity is the max Vote For (‘n’) plus 1
  - a. Ballot 1: put a qualified write-in in write-in position 1
  - b. Ballot 2: put a qualified write-in in write-in position 1
  - c. Ballot n: put a qualified write-in in all write-in positions up to the max
  - d. Ballot n+1: put an unqualified write-in in position 1

## **APPENDIX B: RECOMMENDED PRACTICES**

### **B.1 Elections with high number of ballot IDs in multimode tabulation**

#### **B.1.1 ICC Decks (Absentee)**

- Complete Deck for each precinct (option: a Compiled Deck for each style), without write-ins or exception ballots
- One Adjudication Deck (contains write ins and exception ballots)

#### **B.1.2 Early Voting Precinct Counters (all precincts)**

- One machine of the set
- Compiled Deck (include all styles)
- Adjudication Deck (same as absentee)
- Rest of machines that are identical – Simple Deck or First Position Deck

#### **B.1.3 Other Precinct Counters (all precincts)**

- One machine of the set
- Compiled Test Deck (only include styles allocated to the counter)
- Adjudication Deck (same as absentee)
- Rest of machines that are identical – Simple Deck or First Position Deck

Example scenario:

Election is 4 Early voting tabulators, 2 styles, 3 parties, largest consists is a 6 candidate vote for 1, 2 languages and 20 precincts, vote max = 3:

- The Absentee Deck consists of 1440 test ballots (20 precincts x 3 parties x 2 languages x 12 ballots per deck)
- Adjudication Deck consists of 8 ballots (2 styles x 4 ballots deck (1 blank ballot, 1 overvoted ballot, and 2 write in ballots).
- Early Voting Deck (using Simple Deck) consists of 1440 test ballots on one machine, and 720 test ballots (19 precincts x 3 parties x 2 languages x 6 ballots per deck) on the others

- Early Voting Deck (using First Position Deck) consists of 1440 test ballots on one machine, and 120 test ballots (19 precincts x 3 parties x 2 languages x 1 ballots per deck) on the others

## **B.2 Elections with many precincts but low number of ballot IDs per precinct**

### **B.2.1 ICC Decks (Absentee)**

- Complete Deck for each precinct (option: a Compiled Deck for each style), without write-ins or exception ballots
- One Adjudication Deck (contains write ins and exception ballots)

### **B.2.2 Early Voting Precinct Counters (all precincts)**

- One machine of the set
- Compiled Deck (include all styles)
- Adjudication Deck (same as absentee)
- Rest of machines that are identical – Simple Deck or First Position Deck

### **B.2.3 Other Precinct Counters (all precincts)**

- One machine of the set
- Compiled Deck (only include styles allocated to the counter)
- Adjudication Deck (same as absentee)
- Rest of machines that are identical – Simple Deck or First Position Deck

Example scenario:

Election is absentee only, no write ins, 10 styles, 1200 precincts, 2 languages, 3 party ballots, largest contest is a 6 candidate vote for 1, vote max = 3:

- The Absentee Deck consists of 87,000 test ballots (1200 precincts x 3 parties x 2 languages x 12 ballots per deck)
- Adjudication Deck consists of 20 ballots (10 styles x 2 ballots deck (1 blank ballot, 1 overvoted ballot)).

With the option in the Compiled Deck being set to one Complete Deck per style and a Simple Deck

- The Absentee Deck consists of 44,000 test ballots: 600 (10 first style precincts x 3 parties x 2 languages x 12 ballots per deck) + 43,000 (1190 precincts x 3 parties x 2 languages x 6 ballots per deck)

- Adjudication Deck consists of 20 ballots (10 styles x 2 ballots deck (1 blank ballot, 1 overvoted ballot).

With the option in the Compiled Deck being set to one Complete Deck per style and a First Position Deck

- The Absentee Deck consists of 8,000 test ballots: 600 (10 first style precincts x 3 parties x 2 languages x 12 ballots per deck) + 7,000 (1190 precincts x 3 parties x 2 languages x 1 ballot per deck)
- Adjudication Deck consists of 20 ballots (10 styles x 2 ballots deck (1 blank ballot, 1 overvoted ballot).



## REVISION HISTORY

Rev.	Date	Summary
1	04-19-2022	Branched for 5.13-A.

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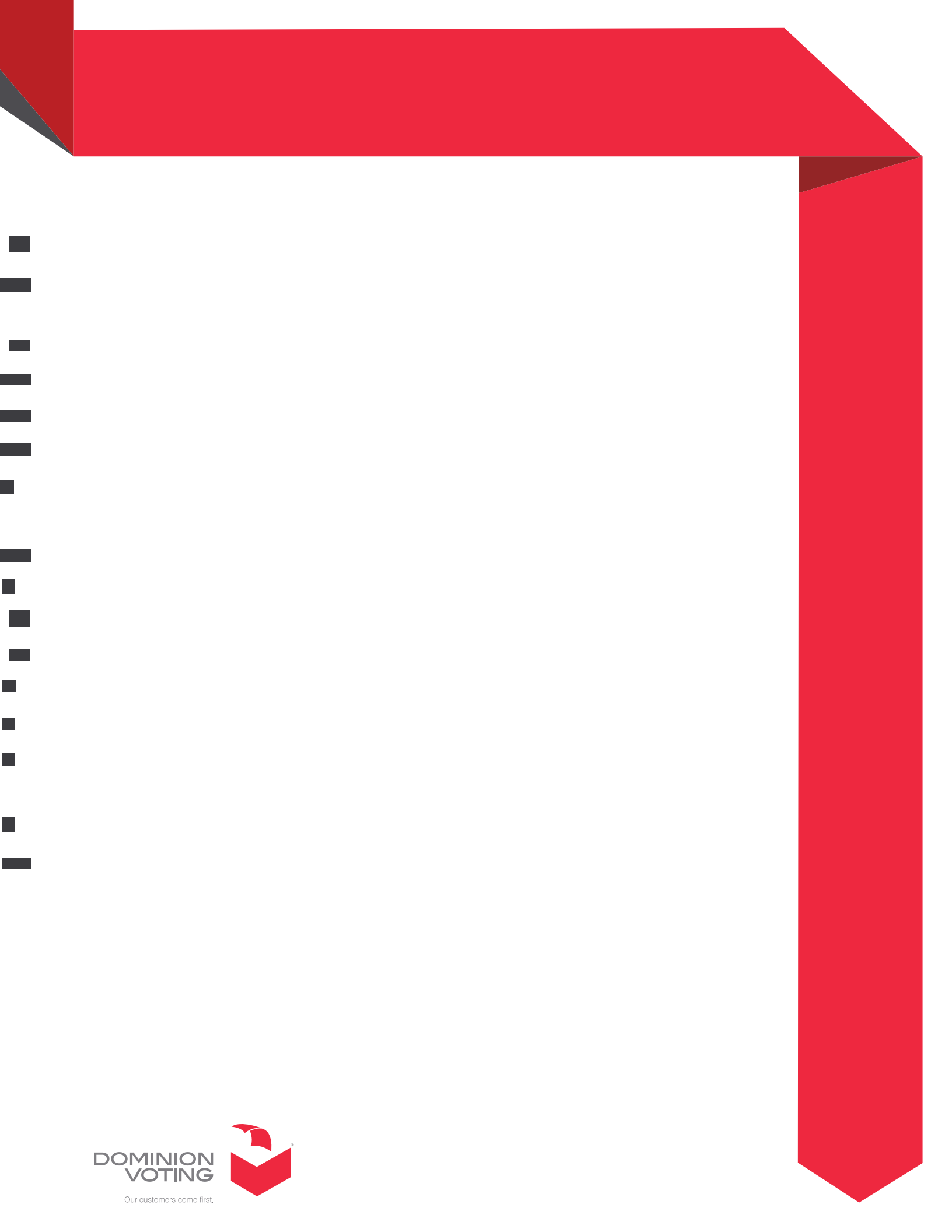
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